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Air Conditioning & Refrigeration News

The Newspaper of the Industry

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Proposed Ductwork Installation Code Criticized By Contractors

* * *

'Underwriters Ordinance' Called Too Stringent By Detroiters

DETROIT—In search of expert help and criticism, George Emery, chief of the Detroit building inspection department, presented a proposed code covering the installation of air-conditioning ductwork to the first fall meeting of the Detroit section of the A.S.R.E. here last week.

D. P. Heath, president of the Detroit organization, presided at the meeting, which was attended by members of the society, members of the American Society of Heating & Ventilating Engineers and guests.

The speaker presented salient features of the proposed amendment to the Detroit Building Code, which will govern the installation of air conditioning and ventilating systems and all types of commercial sheet-metal used in the city. Refrigeration is not covered in this section of the code.

At the present time building construction in Detroit is under the regulation of a code adopted in 1930, Mr. Emery said, and because many existing air-conditioning installations presented certain potential hazards, it was decided that a new code should be prepared.

FIRES LISTED

In working out a code that was designed to reduce hazards, Mr. Emery discovered that the National Fire Protection Association had made a list of 12 fires in air-conditioned buildings which occurred between 1936 and 1938. Out of this list, losses were reported to property from fire and smoke, but no loss of life or personal injury was reported.

Mr. Emery listed the fires briefly as follows:

Rochester—Oil-coated steel wool filter caught fire and released 350 lbs. of refrigerant.

Denver—Fire reported in felted cork duct.

Los Angeles—Store. Paper filters ignited and heat released refrigerant.

Crowley-Milner Co., Detroit—Fire started in blower room of air-conditioning system, spreading smoke and flames throughout building.

Holyoke, Mass.—Smoke from a tar kettle carried into a building by fresh air intake on ventilating system.

Paterson, N. J.—Fire in an air-conditioned building.

Kansas City—Cigarette ignited combustible duct lining.

Kern's Store, Detroit—Cigarette ignited oil filters. Loss of $110,000 from soot on merchandise.

Washington, D. C.—Fire in House Office building.

Los Angeles—Fire in defective electric heater spread through air-conditioning system.

Kansas City—Combustible ducts carried fire to all parts of the Isis theater.

New York City—Fire in system in Bellview hospital.

Mr. Emery then related a recent incident in Detroit when smoke from a burning rubbish fire was picked up by the fresh air intake and carried into the Dexter Theater where between four and five hundred children were watching a matinee. The manager of the theater turned on the house lights, thereby avoiding a panic.

CALLS IT NEW PROBLEM

According to Mr. Emery, air-conditioning systems have ducts which extend all through many buildings and as "we have never had anything of that kind before," certain restrictions must be set up to minimize those hazards. To accomplish this the new code will require:

1. Provision of proper fire dampers and protective devices.

(Concluded on Page 12, Column 1)

Bridgeport Harbors All G-E Appliance Offices

BRIDGEPORT, Conn.—Transfer of General Electric's specialty appliance division from Cleveland to Bridgeport was completed as of Oct. 2, winding up a program begun four years ago to consolidate the various activities of the company in respect to appliances at a single headquarters.

Bridgeport will in the future be the headquarters for administrative, commercial, financial, and advertising divisions of the appliance and merchandise department.

In connection with the transfer of G-E appliance activities to Bridgeport, a new appliance and merchandise institute is being constructed near the main entrance of the company's plant. It is expected that this will be ready for occupancy by Nov. 1.

Home service center of the institute will be under the direction of Miss Edwina Nolan, who served in the same capacity in the institute at Nela Park, Cleveland.

Facilities of the new structure will include an auditorium, several demonstration kitchens, and an extensive product display. It will serve as an educational center for home service activities, and will afford opportunity for display and arrangement of the various G-E home appliances, continuing the work formerly carried on at Nela Park.

The General Electric Home Bureau has been transferred to Bridgeport

(Concluded on Page 16, Column 1)

21,548 Norge Products Shipped In September

DETROIT—Shipments of Norge products to distributors totaled 21,548 units during September, 126.5% of the figure for the same month last year, reports Howard E. Blood, president. It also was announced that 878 new dealers have been added to the list of Norge retail outlets during the past three months.

Refrigerators ranked high in Norge's September gain in shipments over 1938, being reported at 130.8% of those for the same month last year. Electric range shipments were 224.3% of those for September, 1938; while gas range shipments were 123.1% of 1938 figures for the month. Space heater shipments were 188.9% of those for September last year.

Addition of the 878 new dealers to the Norge ranks was the result of a 90-day drive by distributor field men, M. G. O'Harra, vice president in charge of sales, said. To qualify as bona fide outlets, new dealers are required to stock a minimum of three pieces of Norge merchandise, he declared.

Sewell & Riordan Will Make Coils In Newark

NEWARK, N. J.—American Coils, Inc., with headquarters at 25-27 Lexington St. here, has entered the refrigeration and air-conditioning industry as a manufacturer of coils and auxiliary equipment.

The company's plant is under the supervision of C. A. Sewell, who for the past 11 years has been in charge of production and research for Larkin Refrigerating Corp. and its successor, Larkin Coils, Inc., of Atlanta.

Heading the sales department is Jack Riordan, who until his resignation on July 15 of this year was in charge of the New York City branch

(Concluded on Page 14, Column 3)

To Universal Cooler

BEN T. ROE

* * *

Roe Is Sales Executive For Universal Cooler

DETROIT — Appointment of Ben T. Roe to the post of domestic sales manager of Universal Cooler Corp. has been announced by F. S. McNeal, president of the company.

Since 1926, Mr. Roe has been eastern district sales manager for the Leonard division of Nash-Kelvinator Corp.

Midwest Adds Plant For Ice Cream Units

GALESBURG, Ill.—New west wing being built on Midwest Mfg. Co.'s factory here is expected to be ready for occupancy about Nov. 1. It is 100 feet wide and 320 feet long, and adds 32,000 sq. ft. of factory space, bringing Midwest's plant space to 200,000 sq. ft.

The new addition will accommodate ice cream cabinet production for Liquid Carbonic Corp., which Midwest has recently undertaken. Building is of modern steel construction. Engineering, office, laboratory, and hot-room facilities will be accommodated in a 40 x 60-foot area

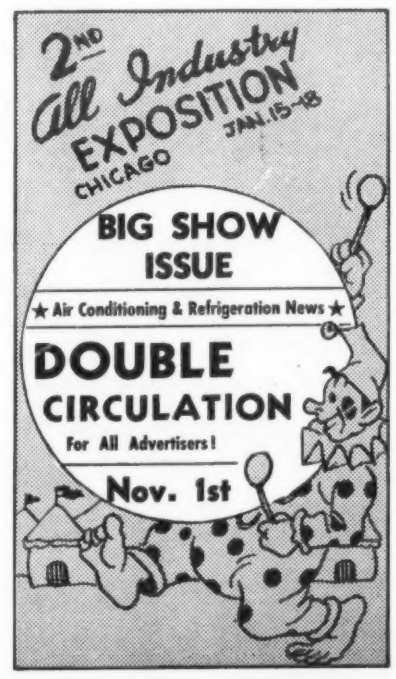
(Concluded on Page 14, Column 3)

Sept. Air-Cooling Sales In Chicago Set Record

CHICAGO—New all-time high records for sales of both central-plant air-conditioning systems and room coolers were set in Chicago in September, reports of dealers to Commonwealth Edison Co. reveal.

Sixteen central-plant installations were made during the month, as compared to 10 last year, and 58 room cooler sales were reported, against four in 1938. Capacity of central-plant jobs sold last month

(Concluded on Page 14, Column 1)



Seven Associations To Meet At All-Industry Exhibition

* * *

Tentative Program For 1940 Exhibition

Sunday, Jan. 14—
10 a.m.—Board of Directors, R.S.J.A. (Refrigeration Supply Jobbers Association)

Monday, Jan. 15—
10 a.m.—EXHIBITION OPENS (Manufacturer's Exhibits)
10 a.m.—General Meeting, R.S.E.S. (Refrigeration Service Engineers Society)
2 p.m.—General Meeting, R.S.J.A. (Refrigeration Supply Jobbers Association)
6:30 p.m.—Dinner Meeting, Nat'l Council, N.A.C.A. (National Air Conditioning Association)

Tuesday, Jan. 16—
9 a.m.—General Meeting, R.S.E.S.
10 a.m.—General Meeting, R.S.J.A.
10 a.m.—General Meeting, N.A.C.A.
1 p.m.—Joint luncheon, R.E.M.A.-R.S.J.A. (Mfrs.-Jobbers)
2 p.m.—Committee Meetings, N.A.C.A.
6:30 p.m.—ALL INDUSTRY BANQUET

Wednesday, Jan. 17—
9 a.m.—General Meeting, R.S.J.A.
10 a.m.—General Meeting, R.S.E.S.
10 a.m.—General Meeting, N.A.C.A.
10 a.m.—General Meeting, A.S.R.E. (American Society of Refrigerating Engineers)
12:30 p.m.—Luncheon Meeting, National Council, N.A.C.A.
1 p.m.—Farewell luncheon, R.S.J.A.
2 p.m.—Joint Meeting, A.S.R.E.-R.S.E.S.
2 p.m.—General Meeting, N.A.C.A.

Thursday, Jan. 18—
10 a.m.—General Meeting, A.S.R.E.
6:30 p.m.—Dinner Meeting, A.S.R.E.

Powel Crosley Injured

CINCINNATI—Powel Crosley, Jr., owner of Crosley Corp. and of the Cincinnati Reds, will spend the next six weeks in a cast as a result of a riding accident recently at his Indiana country estate.

Mr. Crosley suffered a back injury when thrown from his horse. The accident happened only a few hours after the last game of the World Series had been played.

130 Exhibitors Already Signed For Space At January Exhibition

TURKEY RUN STATE PARK, Ind.—Members of the Refrigeration Equipment Manufacturers Association (Rema) met here last week to complete plans for the Second All-Industry Refrigeration & Air Conditioning Exhibition to be held Jan. 15-18 in Chicago, and to listen to lively discussions of trade problems and relations between various industry groups.

With 130 exhibit spaces already sold, the Second All-Industry Show already far surpasses, in number of exhibitors, last year's inaugural exhibition, and there are some good spaces still left, it was announced by M. W. Knight, sales manager of Peerless of America, Inc., who is again chairman of the association's exhibition committee. The show committee contracted for larger space in the Stevens hotel exhibition hall for the 1940 show.

There will be a number of new faces among the exhibitors this year, notable additions being some of the larger machine manufacturers.

Mr. Knight outlined an expanded publicity program for the exhibition, by which it is hoped to better last year's large attendance. He urged the manufacturers to insert notices about the show in their tradepaper advertising.

A coordinating committee, representing the various associations and industry groups who will hold meetings during the show, made a report of a plan which has been worked out to avoid conflict in the meetings. (See adjoining column for the program.)

In a highly interesting and smoothly run program under the chairmanship of E. A. Vallee, vice president of the Automatic Products Co., manufacturer of refrigerating units, manufacturers of refrigeration parts and accessories, and jobbers of parts and supplies listened to prepared papers and debated freely on current industry problems.

At the first program meeting on Thursday C. V. Gary of the Henry Valve Co. read a paper on "Selling

(Concluded on Page 3, Column 1)

General Coordinating Committee

All-Industry Refrigeration and Air Conditioning Exhibition

Stevens Hotel, Chicago, Illinois, January 15-18, 1940

Representatives

Refrigeration Equipment Manufacturers Association
H. V. Higley, President, Ansul Chemical Co., Marinette, Wis.

American Society of Refrigerating Engineers
Deane Pèrham, Director, Refrigeration Division, Chicago Master Steam Fitters Association, 228 N. LaSalle St., Chicago, Ill.

The Counter Freezer Association
C. S. Clark, Secretary-Treasurer, 35 East Wacker Drive, Chicago, Ill.

National Air Conditioning Association
John H. Keller, Mechanical Heat & Cold, Inc., 7704 Woodward Ave., Detroit, Mich.

National Refrigeration Supply Jobbers Association
J. M. Oberc, President, J. M. Oberc, Inc., 904 W. Baltimore St., Detroit, Mich.

Refrigeration Division of National Electrical Manufacturers Association
John F. Ditzell, 3740 Lake Shore Drive, Chicago, Ill.

Refrigeration Service Engineers Society
H. T. McDermott, National Secretary, 433 North Waller Ave., Chicago, Ill.

Ex Officio

President of Refrigeration Equipment Manufacturers Association (Rema)
J. S. Forbes, President, Superior Valve & Fittings Co., 500 37th St., Pittsburgh, Pa.

Chairman Rema Exhibition Committee
M. W. Knight, Sales Manager, Peerless of America, Inc., 515 W. 35th St., Chicago, Ill.

Secretary of Committee
R. M. McClure, Secretary, Refrigeration Equipment Manufacturers Association, 111 West Washington St., Chicago, Ill.

Profitable Sales Ideas

Fifty Years In Business, This 'Old-Timer' Still Seeks New Ways To Land Sales

EAST STOUDSBURG, Pa.—When you've been fifty years in the electrical contracting and appliance business you ought to know considerable about it. But 70-year-old A. Engelhardt, who is completing a half century this year in things electric, says he still has a lot to learn—and he is putting his experience and new knowledge in his Norge dealership here.

This veteran has a go-getter spirit that belies his years, and with his son has been going afield to bring in the business. "I have seen the market change from a buyers' to a sellers' market," says Mr. Engelhardt, "and today the appliance dealer has to go out and get his business. We never employed salesmen in the early days—business came to us—but now we have a sales organization that must literally 'go to the mountains' for sales."

To bring the appliance story to the widely scattered rural settlements in this farming and vacation area, the firm has fitted out a deluxe trailer that has greatly aided sales. Appliances can be demonstrated right at the door of prospects. An electric plug-in to the power line at the prospect's home allows the salesman to hook up the appliances inside the trailer for a working demonstration.

The trailer has an attractive tiled interior, and can be lighted to make a real display floor. Prospects can sit comfortably in the trailer, view the salesman's demonstration of the appliances, while the salesman can take advantage of the informal display room to tell his story.

The mobile showroom has been put to good use at the many fairs and carnivals in the region. This is no new sales trick for the Engelhardt firm—they have been doing it for some 20 years—but the trailer is more effective and makes easy the transport of a display. The trailer is drawn up in a convenient spot, and an inside and outside display can be set up in a few minutes. Many good prospects are found at these exhibitions, prospects that could not be turned up in ordinary fashion. Salesmen run these prospects to earth with a quick follow-up.

Fairs are not the only source of rural prospects. A check is kept with the utility for new rural power customers, and out go the salesmen for new appliance customers. These customers, many of whom have been introduced to electrical appliances for the first time, become good salesmen to their farm friends.

Another "in" the firm has found to the farm market is a salesman who himself lives in the country. This salesman visits around with the farmers in the area and then brings them into the town for a demonstration at the store. Very often, says Mr. Engelhardt, he will blow in with a whole family—plus the family wash—for a washer show. He will keep the family in a room provided for that purpose and go through a thorough demonstration while doing up the family wash in an electric washer. These city excursions usually produce.

"The important thing," Mr. Engelhardt says, "is to know your market, know your prospective customers, and then go get 'em. I've been around here so long I know my market pretty well, but I am still learning ways to land the prospects."

This old-timer follows the advice he heard from Thomas A. Edison, whom he met many years ago at the General Electric plant in Schenectady. When Mr. Edison was asked by an employe how long it would take his son to become an electrician, the electrical wizard, who had long before established his reputation, replied:

"Well, I don't know, I'm still learning."

Follows Sales Leads Right Into the Bedroom, Does This Owner of a 'Trailer Store'

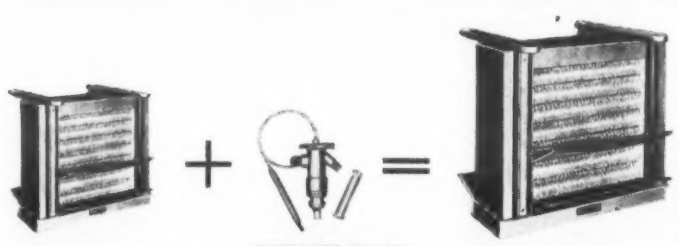
ROCKVILLE, Md.—More sales at greater profit has been Ralph Beall's experience with a trailer "store" in this rural territory. Mr. Beall sells Electrolux units operated on bottled gas.

For about a year Mr. Beall operated his business from a regular store location, but he found that the $35 monthly rent and other overhead was digging too deeply into his profits. That was when he decided to close up his store and operate entirely from a trailer. And it has worked out to his advantage.

Many of his sales are closed in the kitchen, but he can sell in other places, too—the living room, the dining room, or even out in the yard. He got an order from one prospect in the man's bedroom.

Calling at 9:30 p.m. he found this man already in bed, reading. Asked to step into the bedroom, Mr. Beall took along his sales presentation book, gave a complete demonstration. The prospect signed the order without even getting up—and, as Mr. Beall left, asked him to turn out the lights and the radio in the living room, and put the night latch on the front door.

PEERLESS ORIFICE CARTRIDGES INCREASE COIL CAPACITY



THIS SIZE COIL *Plus* PEERLESS VALVE & PROPER ORIFICE CARTRIDGE *Equals* A COIL THIS SIZE

Adding a PEERLESS Thermostatic Expansion Valve, with the proper INTERCHANGEABLE ORIFICE CARTRIDGE, to a refrigerating coil increases the EFFECTIVE SURFACE at no additional cost. More surface is available for useful work—less is wasted in picking up superheat. More refrigeration is accomplished, with less starting power and running time.

The PEERLESS Orifice Cartridge includes ten different orifice sizes—all interchangeable—and available only in PEERLESS Thermostatic Expansion Valves.

STOCKS IN ALL PRINCIPAL CITIES . . . SEE YOUR REFRIGERATION PARTS JOBBER.

PEERLESS OF AMERICA, INC.

MIDWEST FACTORY, GENERAL OFFICES — 515 W. 35TH STREET, CHICAGO

NEW YORK FACTORY 3-26 34th STREET, LONG ISLAND CITY PACIFIC COAST FACTORY 3000 SOUTH MAIN ST. LOS ANGELES, CALIF. SOUTHWEST FACTORY 2218 N. HARWOOD ST. DALLAS, TEXAS EXPORT DIVISION P. O. BOX 636 DETROIT, MICH.

'Appliance Magic' For All In Nebraska Power's 'Sales Carnival'

Utility's 'Barkers' Beat Drums For Fall Business In Real 'Circus' Atmosphere

OMAHA, Neb.—There was plenty of fun and fanfare along the "midway" for electrical appliance folks at the "Sales Carnival" staged by Nebraska Power Co. here last month. More than 500 dealers, salesmen, jobbers, and electrical contractors made plans for record sales as guests at the utility's "sideshow" of appliance magic.

The show went on with true circus atmosphere, and from barker to clowns the drum was kept beating in tune with the quest for sales.

Mrs. B. E. Marsh, residential sales manager of the utility, acted as "ringmistress," and J. E. Davidson, president of the company, held out the hand of welcome to the crowd, and introduced the special guests. Fay E. Smith, company vice president, struck the keynote of the show, as he emphasized the greater opportunities for electrical appliance sales that should result from recent reductions in electric rates.

'DUDE RANGE' IS HIT

And then it was "step this way please" for the thrilling wonders of the electrical world, as the crowd was introduced to the marvels inside the tents. A one-moment-there-brother spieler led the guests from display to display, unfolding an attention-getting story of the new appliances.

A smash hit of the show was the "Dude Range." The little girl who snapped the whip at this frolic was "Rally Sand," who proved the speed of electric cookery to all and sundry, including a doubting clown who was given a sudden "hot seat" when he perched on top of the range.

Fond memories of the first Chicago Fair were returned as "Little Egypt," this time from "Mazadonia," went into her dance on the lamp sales program. There was magic, too. Princess Laverne, an honest-to-goodness crystal gazer, baffled her audience by her uncanny skill in occult peek-a-boo. Her powers went so far as to answer some sly dealers' queries on where to find appliance prospects.

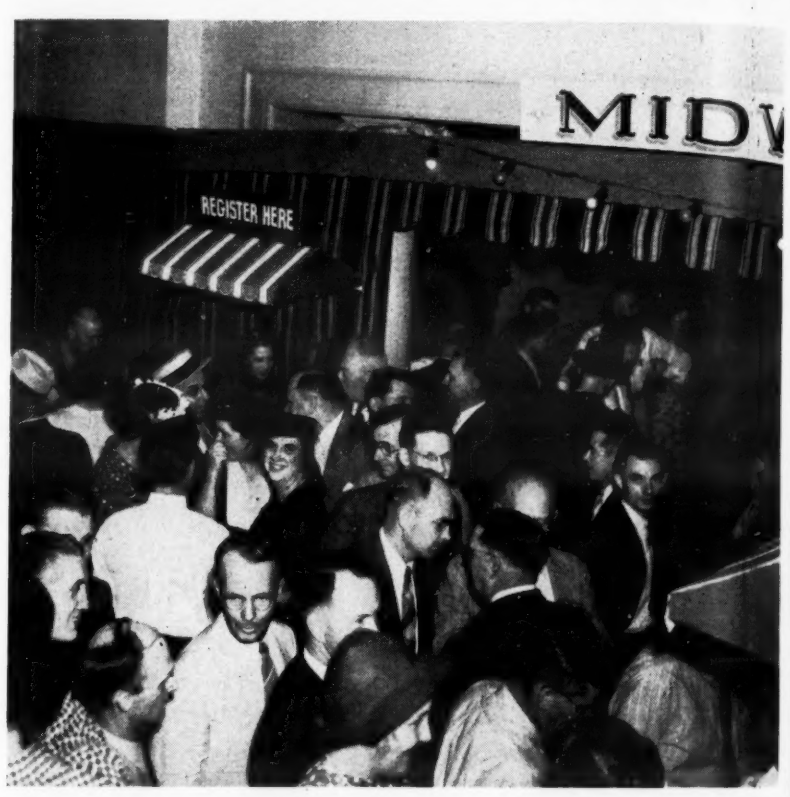
'TOM FINGER'S MIDGETS'

Small appliances were plugged at a display called "Tom Finger's Midgets." The tiny titans of the appliance family were presided over by a top-hatted impressario, who talked the possibilities of small appliance sales into giant proportions.

Even a horror angle was introduced. A giant gorilla, identified as the "phantom," served as a neat foil for a lecture on the advantages of electric refrigeration. The hairy brute was so impressed by the barker's plea for sales activity in refrigeration that he broke his bonds and chased "fear and sales resistance" through the audience and out of the room.

A film on salesmanship was next on the program, with Martha Bohlsen, conductor of the utility's radio programs, acting as narrator. The carnival ended in a gala spirit, as hundreds of balloons were released and the inevitable supply of carnival peanuts put the final touch of authenticity on the show.

Sideshow technique was used to get across the story of appliances as "the wonders of the modern electrical world" in Nebraska Power's fall "Sales Carnival," inaugurating an all-appliance drive. Here, "Little Egypt" from "Mazdadonia" extols virtues of modern lighting appliances.



Crowds jammed the "midway" to get a glimpse of "Tom Finger's Midgets" (small appliances) and learn from a crystal-gazer where to find more and better prospects.

Hit of the carnival was the "Dude Range," where "Rally Sand" proved the merits of electric cookery, and gave the clown perched on the range a sudden "hot seat" to convince him of its speed.

Drug Store Adds Appliances

EDGERTON, Wis.—Dallman & Wileman, local drug store, has added Kelvinator appliances and Zenith radios to its gift department.

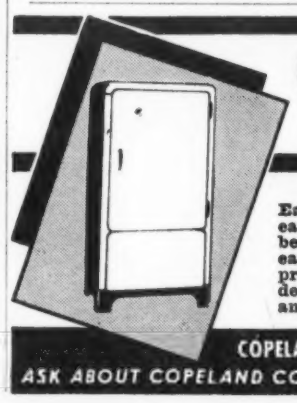
Anaconda Copper Refrigeration Tubes

"Cutting off"—Shown in new booklet—Ask for a copy

THE AMERICAN BRASS CO.

FRENCH SMALL TUBE BRANCH

General Offices: Waterbury, Conn.



Copelands practically sell themselves!

Easier for you to sell, because they're easier for your customers to buy—that's the story behind Copeland! Lower prices, smaller down payment, easier terms . . . selling arguments that mean sales and profits for you! Copeland engineering skill and versatile designing have produced a line of refrigerators to fit any need. Write TODAY for complete information!

COPELAND REFRIGERATION CORPORATION, Sidney, Ohio

ASK ABOUT COPELAND COMMERCIAL REFRIGERATION AND WATER COOLERS

Parts Makers Discuss Trade Relations

(Concluded from Page 1, Column 5)

Through a Manufacturer's Agent Setup—Requisites and Limitations Thereof." Discussion of this paper was led by David Daskal of the Perfection Refrigeration Parts Co.

Also at this meeting was a discussion of "This Parts Distribution Problem," with Harold T. Hulett, manager of the commercial refrigeration and air-conditioning department of the General Electric Co., talking on the subject "From the Unit Manufacturer's Angle," and J. M. Oberc of J. M. Oberc, Inc., Detroit jobber, giving a paper on the subject "From the Wholesale Parts Jobbing Angle." Discussion of this subject might have gone on interminably if Chairman Vallee hadn't adjourned the session for lunch.

At the final session on Friday A. B. Schellenberg, president of Alco Valve Co., read a paper on "Manufacturers Qualifications Under a Functional Classification Trade Policy." Discussion of the paper was led by Fred Schaefer, Imperial Brass Mfg. Co., and E. J. Zoll of Chicago-Wilcox Mfg. Co. A report of Mr. Schellenberg's paper will be found on page 6 of this issue.

San Francisco Dealers Well Ahead of 1938 On Refrigerator Sales

SAN FRANCISCO — Household electric refrigerator sales by dealers in the San Francisco area totaled 1,049 units in August, to bring the mark for the year's first nine months to 8,305 units, as against 6,435 in the same period of 1938, reports to Pacific Gas & Electric Co. reveal. Refrigerator sales in August of last year were 847 units.

Electric range sales held even with 1938, with 10 sales reported in each month, but 1938 sales were up over those for this year so far, 99 to 87 units. With the exception of vacuum cleaners, August sales of other major appliances dropped below comparable totals for last year.

Cleaner sales this August were 1,530 units, against 1,226 last year, and the year's nine-month total stood at 12,295 units, compared to 8,720 in 1938. August washer sales this year were 664 units, compared to 669 in 1938, and ironer sales were 129 units this year, against 160 a year ago.

Radio sales also dropped off about 100 units from the comparable 1938 total, reports showing sales of 4,408 table and console models this year, against 4,593 last year. For the nine months, however, radio sales this year were well ahead of those for 1938.

Following is a nine-month comparison of 1938 and 1939 major appliance sales in the San Francisco territory:

	1939	1938
Refrigerators	8,305	6,435
Ranges	87	99
Washers	5,282	4,553
Ironers	1,036	849
Radios	32,412	29,538
Vacuum Cleaners	12,295	8,720
Electric Heaters	806	1,034

New Hotpoint Branch Opened In Buffalo

BUFFALO—A new Hotpoint distributing branch has been established by Edison General Electric Appliance Co., Inc. at 887 Main St. here. Manager of the new branch is Charles H. Griffith, formerly national advertising manager for the Harrisburg Telegraph, Harrisburg, Pa.

Display Space Used To Advantage By Dallas Store

DALLAS, Tex. — Efficient use of display space benefits both customer and salesman, and the major appliance department of Sanger Bros. here has arranged its electric refrigerators back-to-back so that the display fronts on both sides. This extra row of refrigerators affords plenty of room on both sides for salespeople and customers, and leaves extra and valuable room for the display of other appliances.

Midwest Jobbers Elect Officers

DES MOINES, Iowa—Frank Pond of Refrigeration & Industrial Supply Co., Inc., Minneapolis, was elected president of the Midwest Refrigeration Supply Jobbers Association for the coming year at a meeting of the organization in the Hotel Fort Des Moines, Oct. 2.

Ernie Tramposh of Refrigeration Equipment Co., Kansas City, Mo., was elected vice president of the association, and J. F. Boyd of Dennis Refrigeration Co., Des Moines, was named secretary-treasurer.

Supply jobbers from Minneapolis; Waterloo, Davenport, Des Moines, and Sioux City, Iowa; Omaha and Lincoln, Neb.; and Kansas City and St. Louis attended the meeting. Eight manufacturers' representatives also were guests at the affair.

K. B. Thorndike of the Chicago branch of Detroit Lubricator Co. gave jobbers a few of the highlights to be expected of the coming All-Industry Refrigeration and Air Conditioning Exhibition to be held in Chicago on Jan. 15-18, 1940. R. M. McClure, secretary of Refrigeration Equipment Manufacturers Association, and manager of the exhibition, told the Midwest group of some of the methods which other regional jobber organizations are using to increase attendance.

A round-table discussion of current problems in the supply jobbing field closed the meeting.

Refrigerator Porcelain Shipments Up 42%

WASHINGTON, D. C.—Shipments of porcelain enamel for refrigerator parts increased 42.8% in August over the same month a year ago, Department of Commerce figures reveal.

Stove parts porcelain shipments were up 25.1% over last year's August, and washer parts increased 144.2%. Porcelain utensil shipments were 28.9% higher than in the same month of 1938.

Total value of shipments in all classifications reported by 99 manufacturers was $3,697,286, a gain of 17.5% over July. Shipments for the first nine months were $19,245,774, exceeding the comparable 1938 figure by 22.1%. None of the August increase could be attributed to the "war boom," it was said.

Ductless Air Conditioning Unit Offered By Crane

CHICAGO—A ductless air-conditioning unit for steam or hot water systems, called the Newport, is announced by Crane Co. Advantages claimed for it include ease of installation in new or old buildings.

The Newport unit filters, warms, humidifies, and distributes air through the home. Although intended for winter conditioning, the unit also can be used in summer.

22 Types of Business In Baltimore Get Air Conditioning In 1939

BALTIMORE — Twenty-two business classifications are represented in the list of new air-conditioning installations made in Baltimore since the beginning of the year.

This figure, as compared with that of a few years ago when theaters, restaurants, and department stores were the principal users, indicates how widely comfort cooling has been accepted as a necessity in the modern business establishment, because of the advantages which it offers.

Restaurants lead in new installations, with 22 users, bringing the total number of air-conditioned dining places in Baltimore up to 98. The list includes 11 drug stores, and 11 theaters, five beauty parlors, four bowling alleys, and many professional and business offices.

Three installations were made in each of the following groups: department stores, meat and grocery stores, funeral parlors, two each were made in shoe stores, women's apparel shops, delicatessen stores, cocktail lounges, and industrial applications.

The list concludes with an installation in a furniture store, ice cream parlor, bank, camera store, hotel, fur shop, and a reading room.

Baltimore today has more than 600 air-conditioned business places, requiring a total of approximately 17,750 hp. to supply the necessary refrigeration and ventilating equipment. In addition to this, there are about 300 homes equipped with air conditioning, most of these consisting of room coolers, but a number of them central systems that provide complete conditioning at all times.

Mueller Brass Sets Records In September

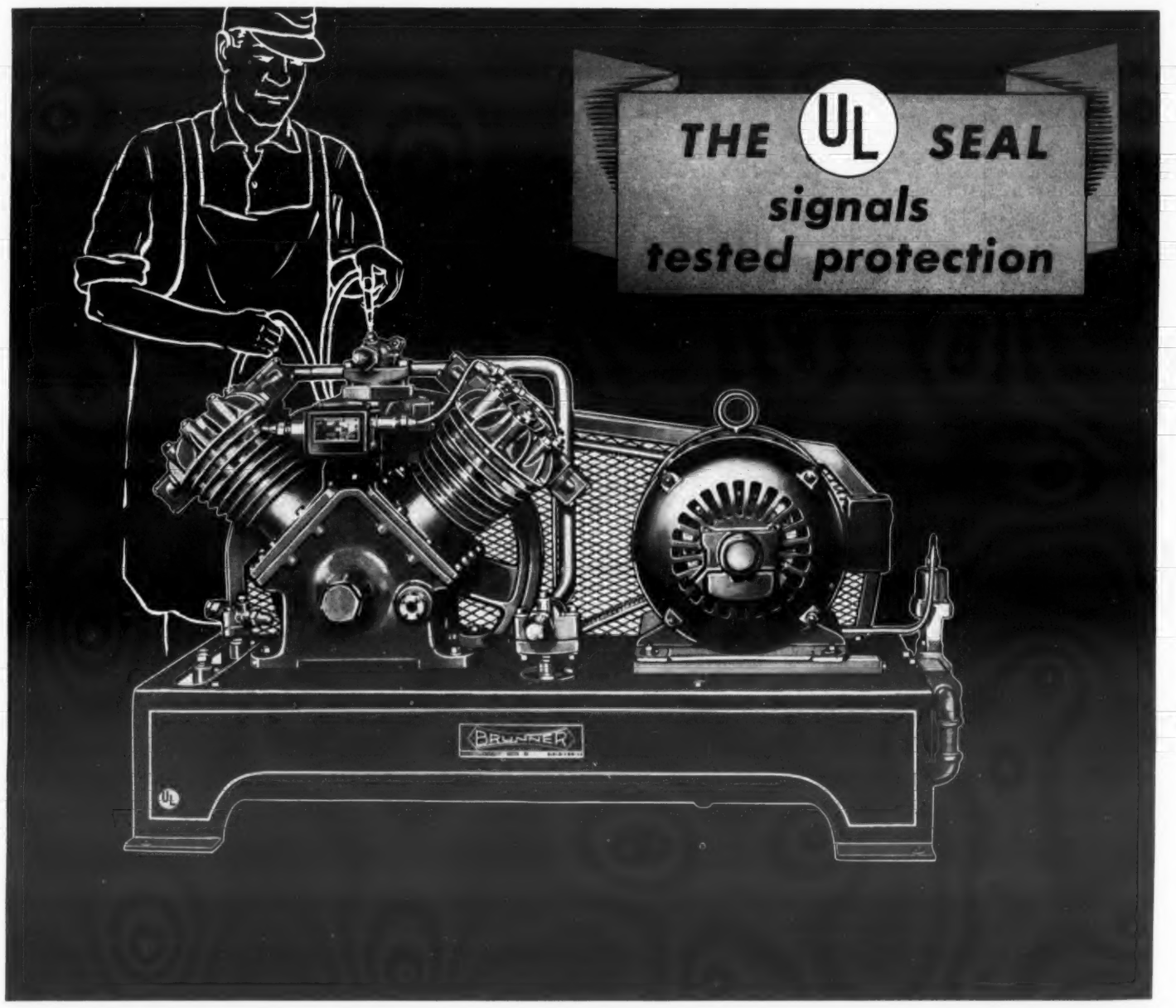
PORT HURON, Mich.—September shipments of Mueller Brass Co. set a new record for the month, and also were the best monthly deliveries of the current fiscal year to date, Dow, Jones reports.

Reflecting the increased demand for copper and copper products that has been in progress since spring, new business booked by Mueller Brass last month was the best total for any month in the company's history, it is reported. So far as is ascertainable, none of the new tonnage booked comes under the classification of war business, it is said.

Earnings of approximately 75 cents per common share are indicated for the final quarter of the company's fiscal year, which ends Nov. 30.

Like Father, Like Son

DALLAS, Tex. — Ed F. Johnson, electrical dealer here, has taken his son, Tommie D. Johnson, into the business.



Every Brunner Unit is tested for Underwriters' Laboratories Approval and Carries the U. L. Seal

Just as no Brunner Condensing Unit ever leaves the factory until it passes trial-run tests for performance, so no Brunner unit is ready for shipment until it passes the rigid Underwriters' Laboratories test for safe-proof construction throughout. Subjected to vacuum and to gas pressure tests far in excess of normal conditions, every connection, every detail is tested by an expert. It is on his okay that the UL seal is applied. Besides assuring more dependable and more economical service, the UL test protects the buyer of Brunner equipment against increased insurance rates; protects him, too, under the re-examination service . . . It is pre-shipment precautions like this that contribute much to the Brunner reputation for year-in, year-out dependability . . . Better get acquainted with Brunner today! Refrigerating and air conditioning equipment up to 15 tons of refrigeration. Catalog promptly on request. Brunner Manufacturing Company, Utica, N. Y., U. S. A.

The Symbol of BRUNNER Dependability

Commercial Refrigeration

The Use of Refrigeration By the Baker

An Authority In the Bakery Field Describes Where & How Refrigeration Is Used In Production & Distribution Of Bakery Goods & Gives Correct Temperatures, Etc.

Editor's Note: Refrigeration is finding increasing use in the baking industry, but the application is a special one that requires specific knowledge of the subject on the part of the refrigeration installer. This article by an authority on bakery practices offers the information that the installer needs.

By William H. Cathcart, Research Dept.,
American Institute of Baking, Chicago

American industries are progressing rather rapidly these days. Advancement is being made on all sides of us. The modern generation has new comforts and luxuries; it has better food and greater variety. We in the baking industry believe that our industry is keeping up with these modern trends of advancement. In recent years the baking industry has been alert to new ideas and has been quick to welcome progress when it can be shown that the new recommendations will improve products and/or methods of manufacture.

The purpose of this article is not to go into all of the recent advancements in the baking industry, but to confine our remarks to the present and possible future use of refrigeration in the baking industry.

Refrigeration is not considered by the baking industry as a luxury of modernization, but as a necessity and, for this purpose, it has been used to increase the quality of products and the efficiency of their manufacture and storage.

There are different sizes of bakeries; varying from the large wholesale bakery to the small retail bakery. Bakeries also vary according to the kind of products they produce. Regardless of the size and kind of bakery, temperature control is necessary for the production of high quality products and in order for production schedules to be rigidly followed.

It is important to control the temperature of flour and other ingredients, of the cake mix, of the dough mix, of the fermentation room, of the proof box, of the oven, of the bread cooler, and of the refrigerator. The necessity for most of this control is due to the fact that in the bakery one is dealing, in the production of most products, with fermentation processes. Fermentation processes deal with the life of yeast and the best method of controlling the growth of this life is by temperature control.

When the temperature is to be controlled below the normal atmospheric temperature, refrigeration is necessary. No matter how this cooling effect is produced (even if it is with cool tap water) it is refrigeration and it will be considered as such. It is interesting to note that in 2500 B. C. the Egyptians fanned porous jars to cool water, thus utilizing the principle of the loss of heat by vaporization.

This is not only of interest due to the fact that it was one of the first references to utilizing a principle of cooling but the same principle is being used today in many cooling systems. It was not until 1861 that Carre experimented with an ether machine.

The amount of refrigeration required depends on the size of the bakery and the type of products produced. Also there are other things which must be considered: desired uses for refrigeration, present production and future expansion, climatic conditions at the location of the bakery, the building construction, present facilities, permissible investment, etc.

The baker should pay particular attention to the requirements necessary and it is important that the unit installed should be of sufficient capacity to take care of his needs and perhaps allow for some expansion in his business. The refrigerating machine manufacturer is generally capable of supplying the baker with the necessary information in regard to the capacity which he needs and of course the baker should be willing to install the necessary refrigerating capacity.

H. L. Fischer has discussed refrigeration in Milwaukee bakeries in 1923.[1] He discusses the use of refrigeration at the mixer, for the fermentation room, and for general storage. Since 1923 installations for refrigeration in the baking industry have been quite widespread and have been extended to other parts of the bakery besides the fermentation room, the mixer, and the general storage room. The places where some types of refrigeration may be used are given as follows:

1. Flour storage in summer.
2. Storage of other ingredients, such as yeast, milk, butter, shortening, eggs, etc.
3. Cold ingredient water.
4. Refrigeration for the mixer, cooling jacket, cold air, or ice.
5. Fermentation room.
6. Proof box in summer.
7. Bread cooling.
8. Retarded dough and batters.
9. Cold slabs and special pastry work.
10. Storage of some types of finished products, such as whipped cream and custard products.
11. General air conditioning.

These individual points will now be taken up separately and at the same time a "bird's-eye" view of the bakery will be given.

Flour Storage

Flour being used in a larger quantity than any other ingredient in bread and sweet goods production and generally to as large an extent as any other ingredient in cake production, its temperature has a considerable effect on the temperature of the mix.

In the summer time, especially, high flour temperature may make it very difficult to control the temperature of the mix. Also in order to insure the maintenance of flour quality, the temperature and humidity of the storage room must be controlled. The temperature should be 65-75° F. and the relative humidity 55-65%. In order to maintain a temperature of 65-75° F. the year around at times and in some parts of the country refrigeration is needed.

Many bakers have their flour storage room in the basement mainly because this is the coolest place in the summer time. Some bakers find that the unit heater works very well in the flour storage room. Its main advantage being that it supplies adequate ventilation around each individual bag which is necessary. The type which you can heat in the winter time and apply some type of refrigeration to in the summer time is preferred.

Complete air conditioning is advisable when it is economically feasible, for it controls not only the temperature but the relative humidity as well. Air conditioning for the flour storage room not only improves storing conditions but reduces the refrigeration problem at the mixer in summer months.

[1] H. L. Fischer, Refrigerating Engineering, 9, 297 (1923).

Storage of Other Ingredients

Refrigeration (35-40° F.) is very important for storing some ingredients, such as yeast, butter, liquid milk, some types of shortening, eggs, fruit, nuts, fillings, prepared mixtures, and miscellaneous ingredients.

The cake baker is realizing that it is very important to control the temperature of his ingredients and also that of the batters which he makes, in order to produce high quality cakes. Most cake bakers are dependent on the control of the temperature of the ingredients (such as above) for the control of the temperatures of their batters.

Although perishable ingredients should be kept in a refrigerator at a temperature of 35-40° F., there are other ingredients such as powdered milk, malt extracts, bread shortenings, and most dry ingredients which the baker uses which need not be refrigerated but which should be stored at a temperature of approximately 70° F.

Thus at some times of the year it is desirable and necessary to have the so-called small ingredient room[2] cooled in some manner; air conditioning being desirable. When these ingredients are controlled at the proper temperature, the refrigeration load during mixing is reduced besides keeping the ingredients in the best possible condition.

[2] The relative humidity of this room should be 55-60%.

Cold Ingredient Water

It is very important for the bread baker to have a supply of cold ingredient water. For every 100 lbs. of flour approximately 62 lbs. of water is added in one form or another. Thus it is evident that the temperature of this water will be an important factor in helping to control the temperature of the mix.

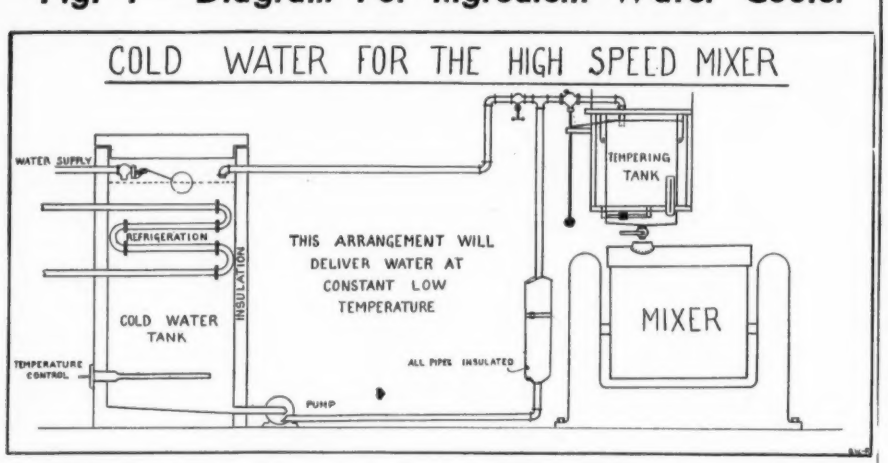
At some times of the year in some localities an ingredient water supply at approximately 35° F. will suffice for the cooling of the dough during mixing (if the temperature of the other ingredients is controlled as noted above). In other cases it will greatly relieve the load on other forms of refrigeration required during mixing.

In Fig. 1 is a diagram showing a widely used method for cooling the ingredient water. At the tempering tank the water temperature can be raised, if so desired, by injecting warmer water. The tempering tank also serves as a means of weighing the water.

(To Be Continued)

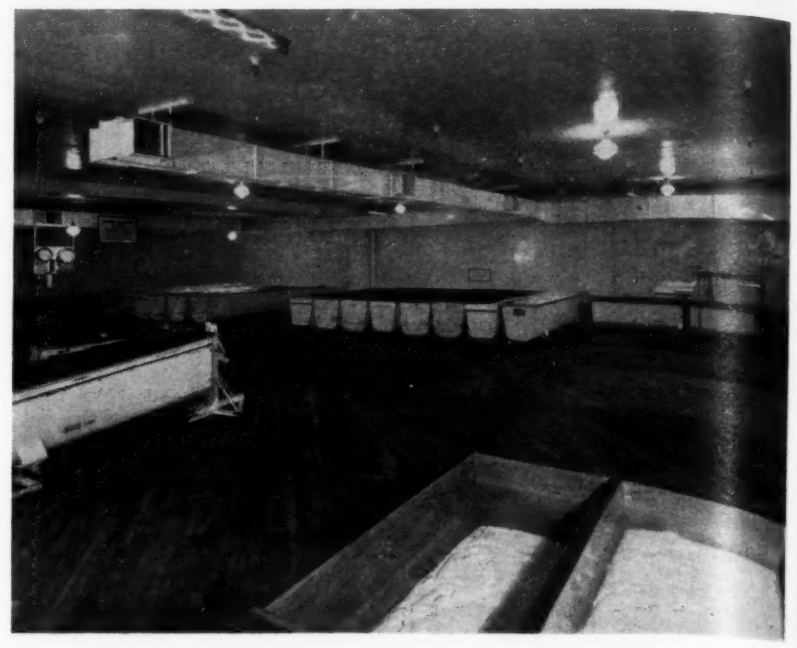
[3] This figure for average horsepower is dependent on the type of machine used.

Fig. 1—Diagram For Ingredient Water Cooler



Typical hookup used in cooling the ingredient water used by the baker. Note location of temperature control.

Fig. 2—Where Air Conditioning Is Used



Air-conditioned fermentation room of a modern bakery. In some of the troughs fermenting dough can be seen. Note that air is discharged in center of the room.

Turkey Grower Groups Buy Cooling Plants

LINCOLN, Neb. — Two turkey growers associations in Nebraska are installing new cooling units in their plants this fall in time for the Thanksgiving marketing season. The Midwest Turkey Growers Association is equipping its plant at Deshler with a cooling system that will freeze 2,500 lbs. of dressed turkeys every 24 hours. It is estimated that 40,000 turkeys will be handled through the plant for the Thanksgiving market alone.

The Central Nebraska Nonstock Co-operative Turkey and Capon Marketing Association is installing a new cooling unit in its plant at Ravenna. The association has contracted for over 20,000 turkeys and capons for this year's run. The type of refrigeration to be used in both plants is circulating brine.

A "Package" Item—Large Unit Sale—An Ever Widening Market—You Have all This with The

CURTIS STORE and OFFICE COOLER!

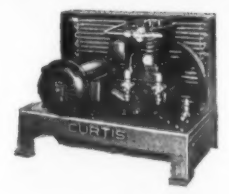
ILLUSTRATION shows two Curtis Store and Office Coolers in the Canterbury Inn at the Merrie England Village, New York World's Fair 1939. This is only one of the countless applications for which this latest addition to the Curtis line of Refrigeration and Air Conditioning Equipment is ideal.

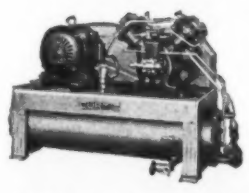
When you sell the Curtis Store and Office Cooler, you open up a vast new market for greater sales and profits. All classes of retail establishments, chain stores, offices, restaurants, banks and many, many others are demanding air conditioning. It has become a necessary factor in successful merchandising and efficient office work.

It's a handsome, complete, factory designed, packaged air conditioner. Mechanically cools, dehumidifies, circulates and filters the air — adaptable for heating — easily and quickly installed and semi-portable. 3 and 5 ton sizes.

The Curtis line of Condensing Units includes sizes from 1/6 to 30 H.P. air and water cooled. Every Curtis product is precision engineered to deliver economical, efficient, care-free performance throughout an exceptionally long life.

If you're interested in profits, in increasing your sales, write to Curtis for complete information—today.





45 Air Cooled Units—42 Water Cooled Units 1/6 to 30 H. P.

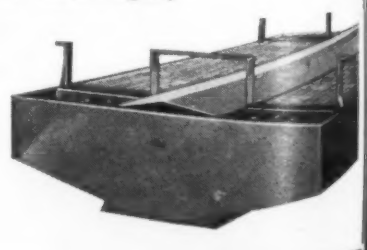
CURTIS REFRIGERATION AIR CONDITIONING and COMMERCIAL

CURTIS REFRIGERATING MACHINE CO.
Division of Curtis Manufacturing Co.
1912 Kienlen Avenue St. Louis, Missouri

REMPE
Autodraft Unit Cooler

Humidifies without "drip"
Circulates cool air thoroughly

For properly cool, thoroughly circulated, and amply humid air in the walk-in cooler, Rempe AUTODRAFT gives exactly the results you'll want for complete customer satisfaction. Thoroughly tested and approved by hundreds of critical users.



WRITE FOR DATA

REMPE CO.
340 N. Sacramento Blvd., CHICAGO

PERSONALITIES

By George F. Taubeneck

It was General Electric day Saturday, Oct. 7, at the World's Fair, and some 28,000 G-E employes descended on New York City from Bridgeport, Conn., and Schenectady, N. Y. They had their wives and offspring with them, and had a wonderful time all day, moving relentlessly around the Fair in long queues, like an advancing army division.

But it wasn't so much fun afterward, I should judge. It seems they couldn't find any place to sleep.

When I returned to the Belmont-Plaza around 1:00 a.m., the lobby resembled customs inspection at an important dock. Hundreds of people milling around, bumping into enormous stacks of luggage. Perspiring hotel employes trying to get a small percentage of them salted down on cots in the available rooms.

And scads of angry, impatient, vituperous women, telling everybody handy a thing or two. Down where I came from they'd call it "giving 'em a piece of your mind."

It was 4 a.m. before they managed to clean up the lobby enough for me to get to the desk and requisition the large sheets of paper on which this was written.

* * *

G-M Too Good

But General Electric and the Belmont-Plaza weren't the only institutions catching Hail Columbia from indignant women. You should have heard the remarks—and witnessed the actual scraps—in the long line waiting to take its turn gandering at the General Motors Futurama.

Not G-M's fault, at all. It's just that their free show is so good, you have to stand in line two hours and a half (or at least, I did)—moving slowly in a mile-long file to get into it.

After you get in, of course, it's worth it. No doubt you know all about the show—a transcontinental trip around a doll's house countryside, the chief feature of which is a traffic-engineered superhighway.

About one woman in 10 didn't survive the wait; but she sure told all the uniforms she could see where to get off before she gave up and flounced away.

Prize remark I heard while in line:

Urchin:—"Ma, what's a Future Ama?"

Ma:—"Why it's an Ama that's in the future, I guess."

Urchin:—"Oh."

* * *

Startling Lightning

The G-E folks thought the Futurama was pretty wonderful, but at that it couldn't compare with their own "man-made lightning show."

I'd have to agree with their judgment there. Seeing and hearing a million volts jump a gap is a shattering experience, one which releases a primeval urge to get down on your knees and pray the Thundergod for mercy.

No fireworks display you ever saw is in it for thrills—visual or aural.

These good folk then moved over to the Westinghouse exhibit, carrying me right along in their inexorable tide. And that was where I got off. I wanted to see the Time Capsule, and apparently the G-E Tidal Wave wasn't too interested.

You've probably heard of this article, too. It looks like a huge projectile, and is stuffed with representative articles of our day. Big idea is that archæologists will dig it up 5,000 years hence, and by studying its contents be able to guess what we were like.

It will be buried in a spot which geologists assure the Westinghouse people probably won't be upheaved or inundated in the next 50 centuries. And descriptions of the capsule—together with minute reckonings of the latitude and longitude of its tomb—are to be scattered in libraries and museums and universities all over the world, so that knowledge of its existence and location should survive the coming-we-know-not-what vicissitudes. On thing that had bothered me about the Time Capsule was partly, but not altogether, satisfied by an inscription on its side.

What, I had wondered, would prevent its exhumation at some period before the 5,000-year mark?

Well, there's an inscription on its side which runs something like this: "You who find this capsule, please put it back. It is not to be opened until the 70th century A.D. If you open it now, you will destroy a precious record to posterity."

That's appealing, all right; but will it sway some ambitious archæologist who happens to dig it up, say 2,000 years from now? Chances are he won't be able to read the inscription right off, and will crack it open to see "what gives" inside.

Ennahoo, the contents may interest you. There's a pack of Camels, a pipe, some Park Square tobacco, poker chips, a baseball, two razors (Gillette and Remington electric), a Yale lock, money, spectacles, a golf ball, a woman's make-up kit, a Lily Daché hat, a slide rule, seeds, swatches of cloth, samples of ore and metals, and a Sears-Roebuck catalog. (That last item—if it survives—should tell posterity about all it needs to know regarding us.)

Other books include the Bible, Gone With the Wind, Arrowsmith, Van Loon's The Arts, and a life of George Westinghouse. The Bible goes in as is. The rest are photographed, page by page, on 35 mm. microfilm—to conserve space and to last longer.

There probably is other stuff in the capsule, but these items interested me particularly.

* * *

Du Pont Exciting

Other industrial exhibits were gems. You could be educated in any one of 'em. Du Pont, for instance, had its Materials of Tomorrow on Parade—such as Neoprene, the artificial rubber, and Nylon, which is to supplant silk for stockings.

I was in the front row when the model came out with the Nylon stockings, and got a worm's-eye (14 inches from retina to ankle) of them. They really make a neat pair of gams look neater—even slicker than silk, I'd say.

The glass fabrics over in the glass exhibit were exciting, too. In a few years, it might appear, cotton and wool will be as passe as fig leaves.

Brief recollections of other exhibits:

Petroleum—a full-sized drilling rig actually bores for oil, and it beats a steam-shovel for audience appeal any day. The drill is forced down into the earth section by section (each section about 50 feet long), starting from a dizzy height. Then the sections are hauled up and disconnected, piece by piece.

The drillers are obviously experienced Southwesterners, and they handle their enormous machinery and tools like the Yankees handle baseball bats.

Grand Marnier Cognac—a French chef makes and serves tasty crepe suzettes.

Bell Telephone—a little device enables you to hear your own telephone voice a moment after you have spoken into the transmitter. Very disconcerting—makes you resolve to study voice and elocution when you get home.

Hot show of this exhibit, as you doubtless have heard, is the free long distance phoning—with 500 delighted eavesdroppers listening in on private receivers.

You register at a desk along with a million others, and every 20 minutes three lucky numbers are drawn. Winners go into glass booths, in plain sight of the audience, and phone sweethearts, wives, or Aunt Lucy. A huge map of the United States is illuminated to show where the call is going, and the route of the connections.

One kid spends his entire time waiting for his girl to finish a local conversation, and finally has to give up, almost in tears.

A girl calls her mother, gets a startled father out of bed, and announces she has married Joe.

Another girl embarrassedly answers her mother's question by revealing that the Joe she was going to marry is now in Florida, she thinks.

A husband calls his wife in Omaha, and they spend their time telling each other that they are fine and having a good time.

Another man calls his parents back in Bellefontaine, Ohio, and they call in the hired man and some neighbors for a first experience with long distance phoning.

The caller is acutely conscious of the crowd listening in, of course, but the called never quite grasp the idea. Usually, they reveal something intimate, embarrassing the bejeezus out of the caller and sending the eavesdroppers into roars of laughter.

What interested me most in this exhibit was the Voder, an instrument something on the order of the Hammond organ, which can be made to talk by pressing buttons.

It forms all the vowel sounds and most of the consonants, although it seems to have trouble with r's and especially with y's.

The operator takes a word, breaks it down into its component sounds, then runs them together rapidly to form the word. From there she goes to sentences. Inflection is managed by footpedals, as with an organ.

Art Show—as a graduate of the I-Don't-Know-Much-About-Art-But-I-Know-What-I-Like school, I'd choose these specimens of priceless paintings:

Goya's "Peter Repentant," for its truly heart-wrenching expression.

Louis Le Nain's blacksmith at his forge, for its lighting—something like our own Cole Phillips, if it isn't sacrilege to mention them in the same breath.

Titian's voluptuous nudes.

Franz Hals' portraits of sturdy Hollanders, which reminded me of how much I like and admire these people.

Rubens' "Suffering Christ."

William Kalff's dramatic still life—gold and porcelain bric-a-brac against a black background.

Thought for the week: Why are the people who frequent art museums, and who really seem to appreciate the beauty on display there, usually such homely, frowzy folks? Some sort of psychological adjustment, or compensation, involved, I suppose.

Museum of Natural History—that Baby Giant Panda, which is now getting to be the size of a small elephant, is a circus in itself. It's so clumsy and yet so human in its gestures, that it can keep you guffawing as long as you can take it.

Time and Space—through a sort of movie projection on a great dome of artificial sky, you are taken on a "rocket ship" tour of interstellar space, getting real close-ups of Venus, Mars, the Moon, and the Milky Way.

It chills you, even when you do remember that these are but photographs made by telescopes. But afterward you can explain the Milky Way, and understand your own explanation.

Foreign Exhibits—knowing my conservative politics, it may shock readers to learn that the Russian building knocked me for a loop.

No pikers, Stalin and his gang. They turned out to be master showmen. To begin with, their building with its skyscraper statue of the Laborer, darned near dominates the Fair. Its architecture, its murals, its materials, its arrangement—all marvelous.

As one goes through the various halls the story of the regeneration of Russia unfolds like a gigantic pageant. Always the story is told in pictures, stills, and continuous movies (on 11 x 14 screens).

Over and over you see the before-and-after—Tsarist Russia vs. Stalinist Russia. And what a difference.

Scale models of their hydroelectric developments, factories, new industrial cities; movies of dwellings and recreational centers—they'll astound you with their size and modernity.

Constantly there are reminders that "All this is owned by the people, and for their use is operated."

No doubt the cost in terms of human sacrifice has been tremendous; and I still don't like the anthill theory of society and social control; but when I left that exhibit I took off my hat. Those fellows have achieved something in their less-than-20-years.

Other foreign exhibits left me pretty cold after that. Most of them were just trade fairs, with native handicraft on display and for sale.

However, the British exhibit restored my soul to its Republican heaven. The British were smart showmen, too, and they had plenty to show.

First you see Eyston's Thunderbolt, one of the English racing monsters which is forever setting speed records out on our Utah salt flats.

(*Concluded on Page 7, Column 4*)

THE DELCO MOTOR FOR OIL BURNERS

Two factors determine whether an oil burner motor is to be a sales asset or a sales liability. The first is appearance—important because oil burner motors are mounted in plain sight. The second is quiet operation, which is essential since heating ducts will carry any motor noise through the house.

The new Delco Motor, designed particularly for the oil burner industry, meets these requirements as no motor has met them before. Strikingly streamlined, the lines of this Delco Motor are in keeping with the modern trend in oil burner design—actually add to the appearance of the unit. This takes on added significance as a selling point in view of the fact that basements are being used more and more as playrooms and recreation rooms.

This new Delco Motor for oil burners is characterized by exceptionally quiet operation—the result of precision manufacturing and many advanced features of design. Diamond-bored, oversize bearings are lubricated from oversize oil reservoirs, and end-play noise is eliminated by a cork end-play take-up device. The indestructible type copper-bar rotor is statically and dynamically balanced for quiet, vibrationless operation, while the Delco centrifugal switch provides positive snap-action starting without fluttering. Ample material is specified to reduce magnetic hum to a minimum and provide high overload capacity. Overload protection is assured by the accurate Delco Manual Reset Thermotron, approved by the Underwriters' Laboratories for oil burner application.

Available in ⅛, ⅙ and ¼ h.p., the new Delco Motor is splash-proof, dust-proof and condensation-proof . . . rugged in construction to assure long, satisfactory service. It is another evidence that Delco Motors for all appliances—refrigerators, washers, ironers, stokers, oil burners and air conditioners—are "designed for the particular job." Write for full particulars on Delco Motors for all appliances.

DELCO MOTORS
DIVISION OF GENERAL DELCO PRODUCTS DAYTON, OHIO MOTORS CORPORATION

A Procedure For Determining Who Is Entitled To Manufacturers Discount

'Find Out What He Does To Deserve It, and What His Distribution & Price Policies Are,' Says Schellenberg

TURKEY RUN STATE PARK, Ind.—Determining the qualifications of a manufacturer who can be sold at a manufacturer's discount under a functional classification trade policy is a matter which must by law be done individually, but if companies producing like items will use certain fundamental questions or standards in making their decisions, the problem will just about solve itself.

That was the message given to members of the Refrigeration Equipment Manufacturers Association meeting here last week by A. B. Schellenberg, president of Alco Valve Co., who read a paper on "Manufacturers Qualifications Under a Functional Classification Trade Policy."

CAN BE DISASTROUS

The problem of determining who should receive manufacturers' prices, said Mr. Schellenberg, is important because of its effect upon our entire price structure, upon our resale prices, and in fact upon markets both actual and potential.

"This question is of serious interest to us as a group, as well as individuals, since a minority, yes even one company, has it in its power to greatly affect and sometimes completely determine conditions of competitive survival," Mr. Schellenberg pointed out.

"Competitors very often force each other into establishing new qualifications or classifications which are inconsistent with a well thought out plan of customer classification. Since one competitor cannot for long enjoy an advantage because of a peculiar classification of customers, the other competitors will be forced to accept such a classification. Eventually, a group of manufacturers will wind up with a wholly inconsistent classification which amounts to an absurd combination of all the existing systems.

"Unfortunately, there is no standard form of manufacturers' qualifications. There is no such thing as a clean-cut concise system of customer classification in this, or any other industry. In view of the many circumstances peculiar to each of our companies, and in view of the legal limitations placed upon group action, it is to be hoped that through individual and independent action we can, in time, eliminate many of the difficulties which now exist.

"In further explanation of the legal limitations upon group action I quote from a recent article by Willard L. Thorp, director of economic research of Dun & Bradstreet, Inc., in which he said:

" 'One added limitation on one's approach to this general problem stems back to the Sherman Act itself which, with the aid of court decisions, establishes the impropriety of group action whereby an industry might agree on the general price pattern to be followed. The prohibition of price-fixing by concerted action appears to have been extended to cover agreements which relate to any part of the price structure. In fact, a number of recent actions by the Federal Trade Commission have arisen out of attempts to define or control distribution channels.'

EACH MUST SOLVE IT

"If, by here discussing our mutual problems we can stimulate constructive thinking as individuals, which will be reflected in the formulation of our own manufacturers' classification, we will have accomplished a great deal. Remember that whenever you remove a peculiar and inconsistent exception from your own functional classification the chances are your competitor will eliminate it from his too. He probably never did like it, and the only reason he used it was that you forced him to by introducing it originally."

Basic reason for preferential discounts to a manufacturer is to compensate him for certain functions he performs, it was explained. These functions are costly and he, therefore, needs a price differential which he cannot profitably pass along. If the manufacturer does not perform these functions and, therefore, does not have the expense, he should not be given a preferential margin, for chances are he will pass it along.

'WHAT DOES HE DO FOR US?'

"Let us briefly consider the functions a manufacturer performs for us and attempt to evaluate them," the speaker continued.

"Let us examine each function from two standpoints; first, what are the services which a manufacturer performs which save us money and for which he must be compensated, and second, what are the effects upon our other markets of the manner in which the manufacturer performs these functions.

"First and most obvious function of an original equipment manufacturer is that he creates markets for us. Since we here are all parts and accessory manufacturers, few, if any, of our products could be sold to the direct consumer as complete and independent equipment. Our products must be incorporated in a unit of some sort to be of any practical value to the ultimate user.

DOES HE CONTRIBUTE?

"Our progress as a group is largely dependent, therefore, upon the progress of the refrigeration and air-conditioning manufacturers. We must recognize the importance of the manufacturer in creating our markets. He often maintains large engineering and research departments which frequently devote a great deal of time to the use of our products. This development work is costly and our price structure should take this into account.

"This function, although of real importance to our particular industry, is difficult of evaluation—the amount of research and engineering required by different manufacturing companies varies considerably. We, therefore, cannot base actual price differences upon the extent of our customer's engineering and research activity.

"We should, however, consider whether or not a manufacturer is doing anything to develop our markets, and this factor in a general way should enter into our formulation of manufacturers' functional classification.

SALES JOB IMPORTANT

"Where some manufacturers do an excellent job of creating new markets for us through their engineering and development work, other manufacturers do an equally important selling job and also build real markets for us through their actual merchandising activity. Original equipment manufacturers relieve us of a great deal of selling expense, and this is probably the most tangible group of functions they perform and the ones which most vividly demand price differentials.

"If the ultimate consumer purchased all of the essential parts of a refrigeration or air-conditioning system separately and had to assemble them himself, our sales costs would increase many, many times.

"Let us first just list the things an original equipment manufacturer does for us.

"1. He distributes our products.

"2. He advertises our products either directly or indirectly.

"3. He educates the trade as to their use.

"4. He installs and services them.

"5. He often warehouses our products.

"6. He takes many of our credit risks.

"7. He often assumes many of our contingent liabilities. In general, a manufacturer purchases in sufficient quantity to permit us actual savings in production costs. The original equipment manufacturers are usually our largest customers.

KEY IS IN FUNCTIONS

It is my belief that in this very tangible group of functions we have the key to manufacturers' classification. The extent to which a manufacturer performs these listed sales functions for us should determine whether or not he is entitled to manufacturers' discounts.

"The manufacturers' distributing organization may be made up of established distributors and dealer-contractors or of factory-owned branches. If a manufacturer has the expense of a distributing organization, theoretically at least, he will not be able to pass along his price differential to his dealers and distributors. Conversely, if a concern enjoying manufacturers' discounts does not have any distributing organization and sells at retail, they may be expected to pass along some of this price differential.

DOES HE USE DEALERS?

"Our first conclusion from this is quite naturally that only those concerns who sell through a distributing organization should receive manufacturers' discounts, and that any concern selling at retail should not receive maximum discounts. Although this is not entirely true, it is my belief that the question of the manufacturers' distributing methods should be at the head of our list of qualifications.

"If the original equipment manufacturers in our industry could honestly hang a sign over the front door reading 'wholesale only,' our problem would be relatively simple. After all, however, even the largest and most well established manufacturers in our industry often sell directly to the consumer.

"There are a number of large manufacturers whose dealer or distributor franchises often only cover certain sizes of equipment and all sales involving equipment other than those sizes are handled directly by the factory. If competition is keen, the dealer or distributor may be left out entirely. We are, therefore, faced with the necessity of evaluating the amount of a manufacturer's business handled directly, and the amount handled through dealers and distributors or his own branch offices. We are also faced with the problem of setting up arbitrary standards as to the number of dealers and distributors which constitute a manufacturer.

CANNOT PENALIZE SIZE

"In establishing these arbitrary standards of a distribution organization, we must if at all possible, avoid discriminating against the small progressive manufacturer who may just be starting out. A classification which discourages the entrance of new companies into our industry is unsound economically, and in a broad sense tends to create a monopoly for the existing large manufacturers who may, by undue maintenance of price levels, actually retard the growth of our potential markets. We cannot, and should not, penalize a small manufacturer who is legitimately competing with larger manufacturers.

"Let us go into this just a little deeper. Coupled with this problem of distribution is the very bothersome problem of the maintenance of resale prices. After all, why have we so often attempted to differentiate between the manufacturer and the so-called 'assembler.'

"This term 'assembler,' I believe, is poorly applied, for after all, all manufacturers are assemblers. It is true various manufacturers assemble to a larger or smaller degree, but they all purchase equipment outside and use it in the fabrication of their particular product. We have come to apply the term 'assembler' to the smaller manufacturer who, for the most part, sells directly to the retail trade. Our price to him, or any other manufacturer or assembler, should not be governed by the amount of equipment which he purchases outside and assembles.

THE 'ASSEMBLER' PROBLEM

"Basically, we are not really concerned with the amount of assembling done by a company. We have labeled a certain group 'assemblers' because they have been the ones in general who have sold at lower prices to the retail trade.

"This brings us to a real problem. When we grant manufacturers discounts we are always concerned about what will be done with the price differential. We hope that the recipient of our manufacturers prices will respect our resale prices. We must constantly guard against enabling a small manufacturer or an assembler to use his price margin to advantage in selling directly in competition with legitimate dealers and contractors.

"I limited this to small manufacturers and assemblers, but practical experience shows us that we should also include the large manufacturers, for occasionally we find that they, too, will upset our resale prices.

MUST MAINTAIN PRICES

"The problem, therefore, is seeing that our resale prices are maintained. We, as individual companies—not as a group, however, may have the right legally to insist upon the maintenance of our prices. The state fair trade acts, together with the Tydings-Miller Act, permits vertical price fixing agreements.

"In general the fair trade acts permit the owner of a trademark or tradename commodity to fix the price at which that commodity is to be resold.

"In establishing our price structure most of us take into consideration the quantities purchased. Since manufacturers as a group are responsible for almost all of our quantity sales, this matter of quantity prices is of greatest importance under the manufacturers' functional classification.

"In view of the restrictions set up in the Robinson-Patman Act, the

(Concluded on Page 7, Column 1)

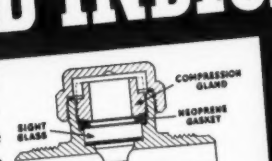
Setting Out After a Tough Baby

No problem today vexes the manufacturer of refrigeration parts and supplies so much as that of "who is entitled to a 'manufacturer's discount.' "

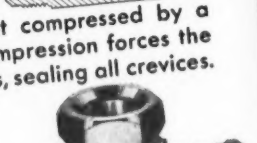
The question is invariably raised in any conversations among parts manufacturers, or between them and various other members of the trade. The determination of company policy on this point is all-important. Mr. Schellenberg in his discussion before the Rema group gave a masterly analysis of the problem, and suggested a procedure for the manufacturers to use individually in attacking it.

LIQUID INDICATORS for EVERY CONCEIVABLE APPLICATION

Mueller Brass Co. Liquid Indicators eliminate refrigerant leakage. The glass is sealed into the forged brass body by a heavy Neoprene gasket compressed by a packing gland. The compression forces the gasket around the glass, sealing all crevices.



OPEN PORT TYPE



Catalog No.	Description
A-13406	1/4" Flare
A-13407	3/8" Flare
A-13756	1/4" M. Fl. x 1/4" F. P. T.
A-13657	1/4" M. Fl. x 1/4" Fem. Fl.
A-13750	1/4" M. Fl. x 1/4" M. P. T.
A-13589	1/4" M. Fl. x 3/8" M. P. T.
A-13590	3/8" M. Fl. x 3/8" M. P. T.

SEAL CAP TYPE

Single Port

Catalog No.	Description
A-13469	1/4" Flare
A-13461	3/8" Flare

SEAL CAP TYPE—Double Port

Catalog No.	Description
A-13522	1/2" Flare
A-13605	5/8" Flare
A-13521	1/2" O. D. Solder
A-13494	5/8" O. D. Solder
A-13517	3/4" O. D. Solder
A-13493	7/8" O. D. Solder
A-13516	1" O. D. Solder
A-13515	1-1/8" O. D. Solder
A-13731	1-3/8" O. D. Solder
A-13491	1/2" F. P. T.
A-13492	3/4" F. P. T.

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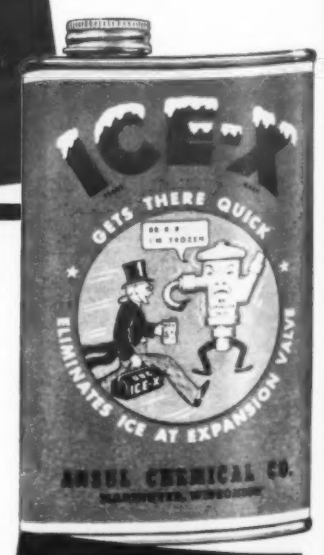

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Gives immediate relief from ice trouble.
Dissolves formed ice—prevents new formation.
WILL NOT CORRODE: It is entirely free of methyl alcohol, ethyl alcohol, alkali, acid, and other corrosives.
MACHINE-TESTED. Leaves no residue.
Does not react with refrigerants or oil.
May be used with acrolein methyl chloride.
Free of any hazard to life or health.
SAFE to use . . . EASY to use.

Ansul ICE-X is equally effective with methyl chloride, methylene chloride, and all "Freon" refrigerants. CA-6-9

ANSUL CHEMICAL COMPANY
MARINETTE, WISCONSIN

THERE'S AN ANSUL JOBBER NEAR YOU... Ask him about ICE-X

Parts Manufacturers Discuss Problem Of Classifying Their Customers

(Concluded from Page 6, Column 5)

emphasis upon quantity purchases in establishing manufacturers' classifications has of necessity been greatly reduced. We must be careful in our use of quantity prices. We cannot discriminate against any companies which we have placed in the same classification. We cannot legally grant extra discounts based upon annual purchases unless we can show actual savings in our costs.

"The primary criterion of the Robinson-Patman Act is cost; we can grant quantity discounts if they result in actual savings, in manufacturing, selling, or delivery costs, but the burden of proof is upon us, and we must show that our discounts do not exceed our savings.

FAULTS IN 'QUANTITY' METHOD

"In setting up our quantity brackets we should bear in mind the effect of our quantity requirements. I believe it is a mistake to set up quantity brackets and prices which encourage overbuying since this often invites unloading our products on the market at reduced prices.

"There are a few other minor factors which may, or may not, be considered in deciding who should be classified as a manufacturer. For example, we have the legal right to classify our customers according to credit risk if we can show actual savings and benefits. Then, too, there are occasionally unusual circumstances peculiar to individual companies which may invite special classification. For example, special promotional work may warrant special prices. We may have a new product which we are anxious to introduce and in view of promotional work done by certain companies may extend to them special prices or place them in the manufacturers' classification when their normal operations would not justify this.

THE QUESTIONS

"In conclusion, any consideration of who should be considered a manufacturer should include the following items. How many of the usual functions performed by a manufacturer as outlined above does the subject company assume? Does it actually make and assemble equipment on which your products are used? What is the tendency of its distribution policy; does it sell mostly through distributor and dealers, or are most of its sales made directly to the customer? If the majority of its sales are direct, then the company is competing for the most part with dealers and contractors and should be sold on that basis. What has been the company's practice with respect to maintaining resale prices? In placing this company in a given classification will you be discriminating against it, or will you be giving it a definite advantage over its legitimate competitors? What sort of a credit risk will the company be?

"After you have defined and limited the above qualifications for your own particular use in classifying manufacturers, be sure that you always use all of the rules all of the time. An established list of qualifications for manufacturers' discounts can save us a great deal of bargaining with each individual customer.

'DON'T BE STAMPEDED'

"If our manufacturer classification is to be of real benefit to us, it must, however, be well defined and rigidly adhered to. It should not be such a flexible device that it can take in every conceivable exception. Merely because a customer claims to be recognized as a manufacturer by a competitor, we should not be stampeded into giving him manufacturer prices.

"It is well to control all manufacturer quotations from the main policy office rather than leaving these decisions to the salesmen in the field. A weak salesman can create a lot of exceptions. Once established, our classification should be carefully maintained, for constant temporary concessions will nullify the benefits of any attempt to establish and maintain an orderly price structure."

Members Suggest Various Plans for Classifications

Discussion leaders on Mr. Schellenberg's talk were Fred Schaefer of Imperial Brass Mfg. Co. and E. J. Zoll of Chicago-Wilcox Mfg. Co. They agreed with Mr. Schellenberg's viewpoint, and indicated that probably the most satisfactory method of pricing to manufacturers would be one which would combine the functional and quantity discount schedules. These men also stressed the need for investigating the resale manufacturer's disposition of the product sold him, and how he used or resold their item.

MOTOR MAKERS PLAN

One idea that seemed to gain favor from those present was one manufacturer's suggestion that discounts be based upon a resale manufacturer's previous year's requirements, similar to the plan used by the manufacturers of electric motors.

This schedule is about as follows: less than 200 units annually, not qualified as a manufacturer; from 200 to 500 units annually, a discount within 5% of that granted to jobbers; over 500, a manufacturer's discount based on a profit set for a certain volume of business.

It was emphasized that the schedule is predicated on what the resale manufacturer took the previous year, not what he is taking in the current year. In other words, he qualifies for a certain discount off of his previous year's purchases.

There may be some legal barriers to the use of such schedules by an entire group of manufacturers, it was explained.

As usual in discussions by parts manufacturers on this subject, the question of "what to do about the local display case manufacturer" bobbed up. The problem, stated simply, is this: the display case manufacturer buys accessories and then either passes them along with the case at cost, or sells them individually at a slight profit. It was pointed out that this practice is not confined to the small, "local" assembler, that some of the larger manufacturers do the same thing.

IN DISPLAY CASE FIELD

One suggestion made was that to qualify as a manufacturer the display case maker must have a dealer setup, another proposed not selling to him unless he made his own compressors, or installed compressors in the case under his own label.

But a more generally agreed upon solution was that the need was for a uniform sales policy on the part of manufacturers of parts and accessories who sold to case people. Program Chairman E. A. Vallee, vice president of Automatic Products Co., suggested that a committee be appointed with representatives from the compressor, evaporator, and expansion valve groups, since these are most involved. While no immediate action was taken on this suggestion, it seemed to meet with favor from those present.

Delta Dealer In New Store

CLEVELAND, Miss.—Delta Hardware & Implement Co., which carries the complete Westinghouse line as well as Maytag washers and Universal small appliances, has moved into a new store here. George Warner, who has traveled the Delta for 15 years for Belknap Hardware Co., is manager.

Dealers' Slant on Sales Problems Worth $125 To Wis. Distributor

MILWAUKEE—To obtain practical answers to some of the more serious merchandising problems which confront appliance dealers today, Greusel Distributing Co., Crosley distributor, is offering $125 in cash prizes in a "What Should Be Done About It?" contest open to retailers and members of their sales staffs.

Open to all appliance dealers and salesmen in Wisconsin, the contest runs from Labor Day to Nov. 30. Only one prize will be awarded to any one dealership, and a requirement is that there be at least 75 entries.

First prize is $50, and will go to the person submitting the best solution to any of the five problems, from a practical standpoint. Style, penmanship, and other features will not receive any extra consideration. No special forms or entry blanks are required.

'WHAT SHOULD BE DONE?'

Problems on which the contest is based, and which the "What Should Be Done About It?" answers must cover, are:

1. A successful dealer, established and operating profitably for years suddenly finds himself in competition with a new merchant in the neighborhood, who apparently can sell for less because "He has no overhead expense"(?) and, therefore, can undersell the old substantial operator who has been serving the public fairly for years. . . .

2. A successful dealer awakens to the realization that some of his competitors are allowing excessive trade-in values—values far beyond the actual worth that can be realized in reselling. The wild trader justifies his position with the purchaser by saying, "I am increasing my volume." . . .

3. A national chain store moves into a town where a successful dealer has enjoyed almost a monopoly on the local patronage for years. Soon the competition of the "chain store" is felt in liberal local advertising, low overhead expense, and low selling prices of quality merchandise, due to tremendous purchasing power and efficient store management. . . .

SHORT-CIRCUITING DEALER

4. When a "mail order house" or a dealer's own supplier will sell either small appliances or major appliances direct to the consumer or through industrial plants, credit unions, or any other buying organization that results in diversion of sales for the dealer. . . .

5. A successful dealer concentrating his sales efforts on nationally advertised brands of large and small appliances, cooperating with local distributors who render a complete service in all details, is competing with a dealer who is promoting no-name brands with inflated lists and long discounts. . . .

All entries in the contest will become the property of Greusel Distributing Co. If used, names of dealers will be kept confidential, if desired. Entries will be judged by three men, selected from Milwaukee advertising agencies.

Table-Top Water Heater Added By Frigidaire

DAYTON, Ohio—A table-top electric water heater with two heating elements has been announced by Frigidaire as a companion to the company's single-unit heater. This new model, now available for shipment, carries a suggested retail delivered price of $94.75 in the company's "Zone 2."

Heating units in this model are of the immersion type for rapid transmission of heat directly to the water. Water temperature is automatically controlled with immersion-type hydraulic thermostats of double-pole construction with silver contacts of the quick make-and-break type.

Like its companion model, the new water heater has a 30-gallon galvanized tank of copper-bearing steel electrically welded. Cabinet is finished in white "Dulux," and has a stainless porcelain top intended to provide additional work surface when the heater is installed in the kitchen. The base is recessed to provide ample toe room.

Personalities—By G. F. Taubeneck

(Concluded from Page 5, Column 5)

Then you look over some magnificent Rolls Royce motors. Comes next a huge cutaway model of the soon-to-be-launched Queen Elizabeth luxury liner, along with models and other representations of England's naval might.

After that you move through exhibit after exhibit demonstrating England's wealth, power, experience, and industrial progress. Here, you say, is a nation!

Piece de resistance is the Magna Charta itself, framed and enthroned on a canopied dias, as is befitting this Declaration of Freedom.

Surrounding are big paintings of important moments in English history, all having to do with the wresting of liberty from rulers.

And framed tablets quote from the Magna Charta, so that you can read its glorious provisions without eyestrain. You feel like standing up and cheering when you read some of them:

"All merchants shall have freedom to come and go and to buy and sell in accordance with the ancient and right customs."

"We will not make any justices, constables, sherriffs, or bailiffs but of such as know the law of the realm and mean duly to observe it."

"To no man will we sell, to no man will we deny or delay right or justice."

"No freeman shall be seized or imprisoned unless by the lawful judgment of his equal or by the law of the land."

This Fair surely has been a tremendous education to hundreds of thousands of Americans. It probably beats high school in a number of respects.

And it certainly deserves to be repeated next year—and followed up by, say Detroit, in 1944.

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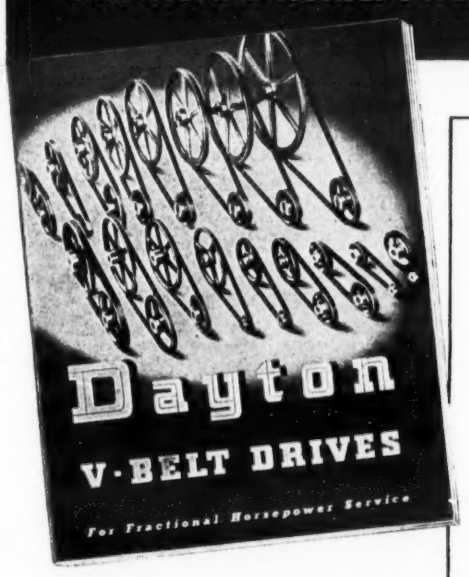
THIS NEW Dayton FRACTIONAL HORSEPOWER CATALOG No. 150



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Perhaps you know that Dayton Standard Fractional Horsepower V-Belt Drives simplify design, reduce costs and assure maximum service. You may be familiar with the patented construction of Dayton V-Belts which give greater strength and endurance. If so, you know that Dayton V-Belts do not squash, twist, vibrate or stretch. They work on extremely short centers. They have extreme crosswise rigidity.

Yet you couldn't possibly have at your finger tips all of the information that's crammed into the engineering omnibus which is Dayton's new Catalog No. 150. In one of its sections over 165,000 drive combinations are shown in the belt drive tables alone. A few of the highlights of No. 150's contents are shown on this page. But only a study of the catalog, itself, will reveal the priceless information it contains.

For instance, the reference tables in sequence of pulley sizes are of tremendous help to the machinery designer in laying out drives for a range of machines to be made on a production basis. Or, if you are developing a machine to be made in *quantities*, yet one which will be operated at different speeds and capacities, the reference tables automatically give the required information.

Dayton Fractional Horsepower V-Belts are made in *three* standard sections in a complete range of lengths to meet all conditions of small machinery service. They are being used on everything from oil burners to office appliances . . . from stokers to shoe machinery . . . from compressors to coffee mill machinery . . . for household pumps, display fixtures, laundry, textile, tanning machinery and for hundreds of other uses. So, whether you make or use small machinery or household appliances, remember that $5.00 will not buy the Dayton Catalog No. 150, but it is yours *free*.

Write for it today!

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Dayton

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MADE BY THE WORLD'S LARGEST (D) MANUFACTURER OF V-BELTS

✻ Whether for fractional or a thousand horsepower there is a Dayton V-Belt Drive for the job.

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"Beauty is only skin deep" . . . but under the lustrous silver surface of these sensational new Servel units, you'll find a degree of performance, economy and noiselessness never before available in low-pressure refrigeration. Write today for details. Servel, Inc., Electric Refrigeration and Air Conditioning Div., Evansville, Ind.

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Air Conditioning Regulations May Speed Development

AIR-CONDITIONING contractors in many large cities now have a real worry on their hands. City fire inspectors and building inspectors are demanding that air-conditioning installation codes be passed which will provide more adequate protection against fire hazards.

First effect of such codes will be to increase the cost of installations—at a time when everyone is striving desperately to bring the costs down so as to extend the market and build sales volume up to a profitable point. Ultimate effect, many fear, will be to hamstring future engineering development of the industry.

Codes Should Establish Standards of Performance

This latter fear, of course, should be a matter of genuine concern to the entire industry. Wherever hearings on proposed air-conditioning installation codes are held, the industry should be well represented by competent engineers to see that such codes merely set *standards to be achieved,* rather than specifying the mechanical details of installations.

So long as an installation need only meet approved standards of safety, progress can continue. But when detailed specifications are made *law,* engineering development is frozen at that point.

Contractors Feel Impact Of Increased Costs

What bothers the fire inspectors is the possibility that a fire occurring in one corner of a big building can be spread rapidly to all floors through recirculating-air-duct systems. There have been a few such cases recorded. Contractors argue that these cases are so few that the entire industry should not be penalized for them; that according to the statistics, chances of fire being spread through an air-conditioning system are remote, indeed.

One can well sympathize with the contractors who feel ill-used over the sharp increase in their costs which will result from the addition of multiple protective and warning devices to the systems they install. From the standpoint of the entire industry, however, it should be pointed out that in the past such restrictions have often accelerated the engineering development of an industry.

How Regulation of Multiple Systems Helped Refrigeration

A dozen years ago the multiple system was in general use for household refrigeration in apartment houses. A big compressor in the basement pumped refrigerant through 20 or 30 evaporators in as many cabinets. This was deemed wise because it was cheaper to make such an installation than to sell an equivalent number of self-contained refrigerators; because it was cheaper to service, operate, and maintain; and because it was quiet.

And then two things happened: (1) Unions began to get wise to this "opportunity," and agitated for requiring a union engineer on the job in the "operating room" at all times; and (2) an occasional leak developed in an evaporator, sending the entire refrigerant charge (a lethal dose, in some cases) of the whole system pouring out into one small apartment.

Compromise Code Resulted In Feverish Laboratory Work

Over in Chicago an ambitious health department set out to regulate these systems by code. Their first idea was to throw out multiple systems entirely, and to limit the quantity of refrigerant in any refrigerator to one pound, unless the unit was sealed.

At that time the passage of such regulations would have been a major calamity to the industry. Not a compression refrigerator on the market then used as little as one pound of refrigerant. There were only a couple of sealed units available. The industry rushed its best men to Chicago, and for the summer of 1929 a show went on the likes of which the industry has never seen since.

Compromises were finally reached in the code: but multiple systems, loaded up with protective and warning devices, became more expensive to install and maintain. And manufacturers put pressure on their engineering departments to design refrigerators that were completely safe, quiet like a mouse, practically service-free, and less expensive to buy and operate. As these goals were gradually attained, the multiple system passed out of the picture.

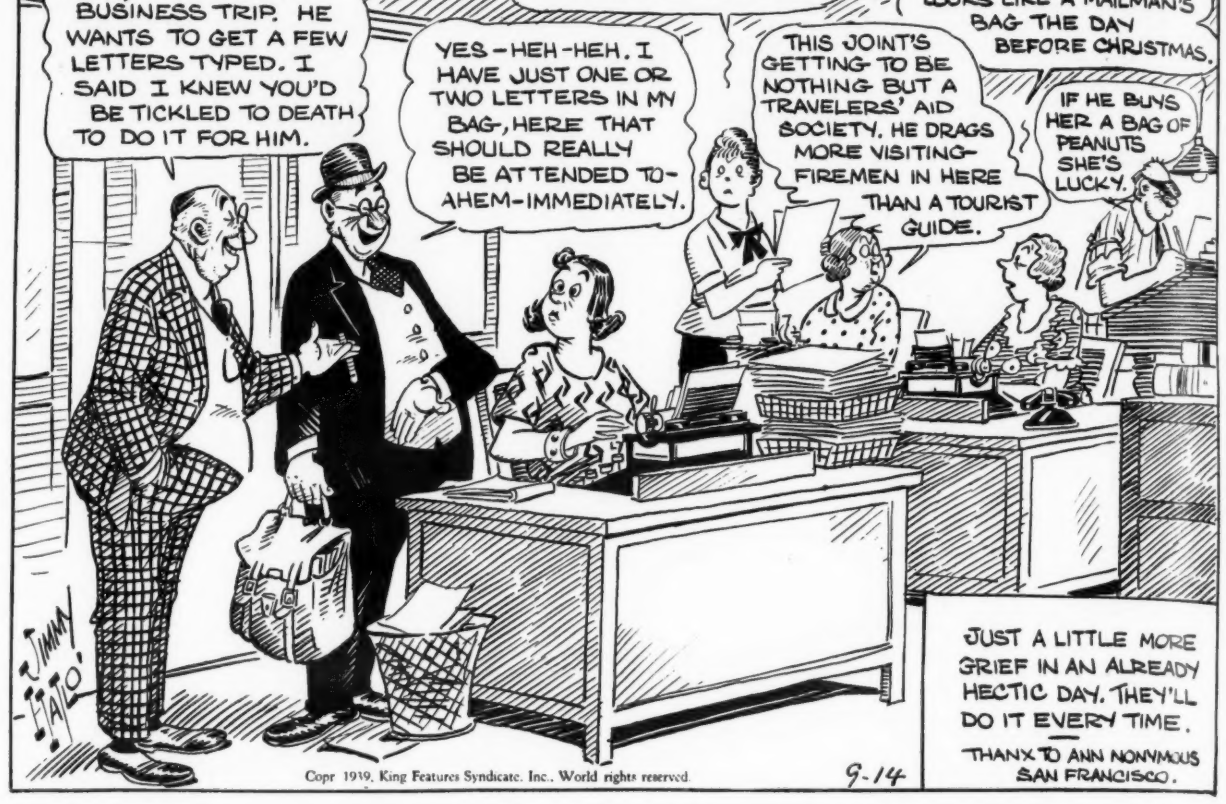
Engineering Progress Accelerated By Necessity

Out of all of this welter of activity came the "Freon" family of refrigerants, now used by practically every household refrigerator manufacturer, and which are not only non-toxic but very efficient as well. There came also a widespread use of the hermetically sealed compressor, and the quantities of refrigerant used were pushed down from pounds to ounces.

All these developments resulted in much more economical operation costs, higher efficiency, and reduced noise.

Put briefly, the code restrictions initiated in Chicago—which the industry deplored with its every breath at that time—resulted in making refrigerators better, cheaper, more efficient, and utterly safe.

They'll Do It Every Time . . . By Jimmie Hatlo


— AN OLD FRIEND OF MINE, IN TOWN ON A BUSINESS TRIP. HE WANTS TO GET A FEW LETTERS TYPED. I SAID I KNEW YOU'D BE TICKLED TO DEATH TO DO IT FOR HIM.
I DON'T SUPPOSE HE EVER HEARD OF A PUBLIC STENOGRAPHER.
YES — HEH-HEH. I HAVE JUST ONE OR TWO LETTERS IN MY BAG, HERE THAT SHOULD REALLY BE ATTENDED TO — AHEM — IMMEDIATELY.
JUST ONE OR TWO LETTERS? I AM LAUGHING. THAT BRIEF CASE OF HIS LOOKS LIKE A MAILMAN'S BAG THE DAY BEFORE CHRISTMAS.
THIS JOINT'S GETTING TO BE NOTHING BUT A TRAVELERS' AID SOCIETY. HE DRAGS MORE VISITING-FIREMEN IN HERE THAN A TOURIST GUIDE.
IF HE BUYS HER A BAG OF PEANUTS SHE'S LUCKY.
JIMMY HATLO
JUST A LITTLE MORE GRIEF IN AN ALREADY HECTIC DAY. THEY'LL DO IT EVERY TIME.
THANX TO ANN NONYMOUS SAN FRANCISCO.
Copr 1939, King Features Syndicate, Inc., World rights reserved.
9-14

No doubt the same sort of thing may happen to the air-conditioning industry now that it is in a similar spot. Engineers don't take such restrictions lying down; they figure out new ways of doing the same thing at the former costs. Frequently these new ways of doing things turn out to be better from every standpoint. And that's progress.

Self-Contained Units Will Receive Impetus

One thing that most observers expect to happen is that fire-hazard restrictions on central systems will give a new impetus to self-contained air conditioners. They aren't fire spreaders. And as central systems are made more expensive the differential which already exists between them and the self-contained jobs will be made even wider.

The wider this differential is made, the more self-contained jobs will be sold, which in turn will make them cheaper and cheaper and thus increase the differential still more.

Makeshift Installations Lead To Better Designing

That many factors in the industry will deplore this trend is to be expected. Back in the earlier days of commercial refrigeration they deplored the tendency to install several small compressors in series on one installation, rather than using one large compressor. It wasn't good engineering, they said.

These small compressors, however, could be turned out by mass production methods; and so it turned out to be much cheaper to install several in a series than to put in one big machine of the older type.

This led to considerable rivalry between the manufacturers of large and small compressors, with the result that the makers of big ones began putting out smaller ones, and vice versa, and in a very short time both groups were turning out vastly more efficient and lower-priced machines. Again, progress.

So the air-conditioning industry, while watching code makers carefully to see that they do not specify *how* a result shall be obtained, need not look too fearfully at the code restrictions which are now in the process of formulation. Rather than proving calamitous, they may well serve as a much-needed impetus to the progress of the industry.

LETTERS

Bogart Has Faith In Small Homes

H. G. Bogart Co.
217 Cherry St.
Toledo, Ohio

Editor:

I was tremendously interested in your editorial in the Oct. 4 issue, entitled "Small Home Era."

It happens to be one of my pet hobbies, and I have been spending a lot of time throughout our territory developing the idea of the small, complete, compact, all-electric home.

I am enclosing a tear sheet of an advertisement which we ran in the Ft. Wayne Journal Gazette Oct. 8, which I thought you would be interested in, inasmuch as it ties in directly with your editorial.

This particular home which we announced was the first of a group to be built in that city, and if you could have seen the response which we received on opening this home last Sunday, you would readily appreciate the soundness of your editorial.

You will note that we have taken an entirely new approach in advertising this home, by appealing directly to the women, and adopting as our caption to the advertisement the same slogan which General Electric Co. recently built around their entire merchandising program, namely, "It's Easy to Stay Young Electrically."

Fundamentally, we believe a small house, completely equipped with labor saving devices, does contribute much towards a woman staying youthful in appearance and actions.

H. G. BOGART

Census Bureau Asks For Cooperation

Department of Commerce
Bureau of the Census
Washington

Editor:

The schedules to be used in the forthcoming Census of Business have just been received from the Printing Office in final form, and I am enclosing copies of those for retail and wholesale trade.

As drafted, they incorporate the combined judgment of many representatives of business organizations who met here in Washington earlier this year to discuss the type of information most useful to business that could be collected without unduly burdening the respondents.

The Biennial Census of Manufactures will be taken at the same time as the Census of Business. I understand from T. J. Fitzgerald, the chief statistician, that the manufactures schedule form will be sent to you within a short time.

I am very glad to advise you that the preliminary work and the plans for the Business Census have been advanced several weeks over those of any previous census.

The enumeration will begin on Jan. 2, and will be completed in June, 1940. That will enable us to make at least the basic facts available to you in the late summer of 1940.

When the canvass begins, we will find it necessary, as in the past, to have the wholehearted support and cooperation of business men, trade publications, trade associations, chambers of commerce, etc.

Publicizing the census during the period of the canvass, beginning in January, and urging your readers to report promptly, will be a real contribution toward making a complete, accurate, and rapid enumeration.

This, in turn, will enable us to get the results in your hands at the earliest possible date. The assistance which you rendered in connection with previous Business Censuses was most helpful, and it will be reassuring to feel that we can again count on your active support.

F. A. GOSNELL,
Chief Statistician,
Census of Business

B. T. U. Fraternity Will Read the News

4833 N. Rockwell St.
Chicago, Ill.
Oct. 10, 1939

Sirs:

At our last regular meeting of the "Beta Tau Upsilon Honorary Air Conditioning & Refrigeration Fraternity" it was voted by the members to subscribe to the AIR CONDITIONING & REFRIGERATION NEWS, and also to purchase Air Conditioning Manual No. A-1.

As treasurer of the fraternity, I was authorized to order both the above mentioned publications and am therefore enclosing check for $5 to cover same.

Our next regular monthly meeting will be held on Thursday, Oct. 19, and I will appreciate it very much if you will send me both publications not later than Oct. 18, so I will be able to present both to the members at the next meeting.

Please send above to M. B. Kaufman, treasurer, B. T. U. Honorary Air Conditioning and Refrigeration Fraternity, 4833 N. Rockwell St., Chicago.

M. B. KAUFMAN

Service Manuals 'Stop Everything'

19 Prentice Ave.
Greenfield, Mass.
Oct. 10, 1939

Sirs:

I wish to convey my sincere thanks for your speedy and adequate reply to my enquiry. I should also like to avail myself of a copy of Directory D-6 you recommend for which please find enclosed 50 cents.

We have on hand an abundance of data on air conditioning and refrigeration but your Service Manuals have everything stopped.

JAS. MCNICHOLAS

Tells How To Become an 'Independent Service Man'

Graduate Sets Up His Own Business—Expects To Have A Sales Agency Next Year

P. O. Box No. 94
Republic, Pa.
Oct. 13, 1939

To the Editor:

I have been following with much interest the letters concerning home study schools, etc. Since I am both a recent graduate of R.A.C.I. (Nov. 2, 1938) and a subscriber to your magazine (as a result of one of the instructors recommending it as tops in the field), I would like to add my bit of comment.

Concerning the school—I completed the total course in approximately 11 months on top of four years of college work, all self earned over a period of seven years. I believe I left a very good record at the R.A.C.I. but if you doubt it, call for the scandal sheet on student CC242.

I had studied educational psychology and taught school two years which would give me a standard by which to judge the instruction. I concluded that the R.A.C.I. gave the most "up to date" instruction and training I had ever seen and that the instructors and students were "tops."

No job was guaranteed me when I enrolled for the course and, since I've had considerable experience in finding and holding jobs, I wasn't surprised that none was forthcoming when I graduated. However, they were and still are cooperating with me through their well-organized employment service.

But I don't need a job now. They gave me something more important, the specialized training necessary to handle a business of my own, as the following explanation will show.

I graduated, age 28, single, almost $400 in the red, and with considerable experience away as a result of being on my own since 17. I returned to this locality to work for Republic Steel, which had been my employer two times previously, and with whom I had a perfect record as an efficient and safe employe.

While liquidating my debts, I inserted an advertisement in AIR CONDITIONING & REFRIGERATION NEWS which brought four requests for further details by manufacturers. I didn't land any of them because I asked $35 per week which was too high a starting salary for anyone without field experience.

I was earning about $50 per week and had already decided to set up my own business in refrigeration as a sideline until it would occupy my full time.

Accordingly, I visited all the service men in the district, found they had more calls than they could handle, found that none of them had been schooled in the principles of refrigeration. Then I visited some of their customers who said they sometimes waited a week for service. I concluded that this territory, and any other similar locality, had "plenty room" for one more service man.

I paid off my debts, bought a "flivver," purchased a very complete set of fine quality service equipment for $180 wholesale, installed a telephone, hung out a shingle, had cards printed and distributed (about 100 of them), and without running a single newspaper advertisement, I had all the spare time work I could handle.

I am planning a year hence to set up a sales agency in refrigeration and heating equipment. My service record will furnish an excellent list of prospects.

My experience in service work has justified my faith in the R.A.C.I. since, even though my memory is rotten, I don't have to refer to my study material to handle any job. Doing a thing is the real test of good instruction, and it shows that the training stuck and was mentally digested.

I hope this record of myself will serve as a guide to other young men who need to create jobs for themselves. I have been doing well and my "flivver" has blossomed into a 1940 deluxe sedan.

With best regards for the NEWS and the R.A.C.I.

ALBERT PERRINE

A Booster for R.A.C.I.

316 Sixth Ave. S.
Nampa, Idaho
Oct. 12, 1939

Dear Editor:

Would you allow space for a R.A.C.I. booster.

Dear fellow students of R.A.C.I. and friends. I am a graduate of the 1938 classes and I am pleased to tell you fellows that I am very much satisfied for what the training has already done for me.

Refrigeration and air conditioning was all "Greek" to me before taking this training and now I can say it is my "life saver" as for my job. Studies were pleasant but I really put my heart into it.

I am with an electrical and refrigeration firm and am drawing 90 cents per hour and am allowed car expense. Am employed steady and get all the refrigeration repair work and installations that I can have time for.

There is a demand for well trained refrigeration and air-conditioning men and good pay too. There are good opportunities in this field and I'm telling you I am pitching in for the best. You locate the job you want and I feel satisfied the institute will help you get this job and the R.A.C.I. training will hold it.

VERNON B. WINANS

Chills Bring Thrills To Californian

Chilling a dozen car loads of future orange juice is the daily job of Louis L. Bates, chief engineer of the Escondido (California) Orange Association which has the world's largest fruit chilling plant.

• • •

Operating the engine room of the largest fruit chilling plant in the world holds more thrill for Louis Bates of Escondido, Calif., than do his diversions of fishing and hunting.

Mr. Bates, in his late thirties, has known the orange country long before California fruit growers built orange chilling plants. He worked in the groves, and was a mechanic and millwright for the Orange Association 10 years before the precooling and ice plants were made a part of the fruit marketing plan.

Now as chief engineer for the Escondido Orange Association he is continually on call to assure the normal pulse beat of this immense plant. There daily 12 car loads of fruit can be crated, cooled, and packed in iced refrigerated cars for their trip to markets in every state in the country.

The oranges as received from Escondido's sunny orchards are first washed, sorted, and crated, moving on conveyors through a concrete tunnel to the cooling plant. There the foreman of the first stocking directs his men who shunt the fruit by a boom to cooling rooms on any of the three floors of the plant.

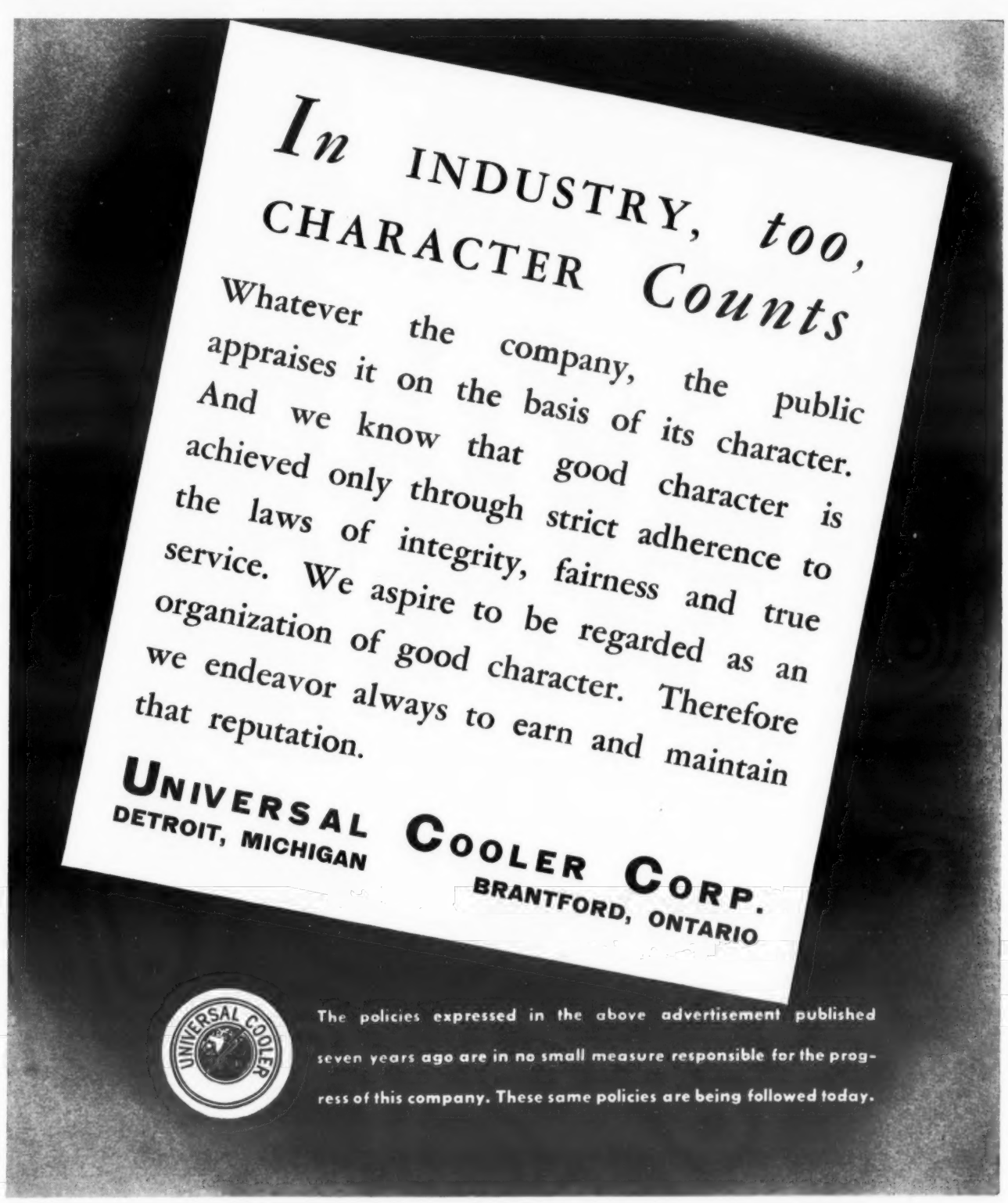
In these rooms Mr. Bates takes precautions to see that the boxes are spaced to allow free circulation of air so that the outdoor temperature of the fruit which varies from 65 to 85° is reduced to 6° above freezing.

Mr. Bates explains that the secret of successful chilling without causing mould is thorough circulation of vast quantities of cooled air. One hundred twenty thousand cubic feet of air every minute pass through the Escondido chilling rooms.

When markets are glutted, or in building up reserves for holiday trade, this one plant can store 105 carloads of oranges. Which Mr. Bates points out is a good many glasses of orange juice.

In addition, Mr. Bates, supervises the freezing of a 100 tons of ice a day to pack into refrigerator cars. Mr Bates reads trade magazines and studies refrigeration through International Correspondence Schools.

Mr. Bates is an example of the practical engineer who trained the hard way by experience plus reading technical magazines and books and studying in his spare time. He considers that one of the greatest unfolding vocational opportunities for youth is air conditioning. This industry will multiply to one of America's greatest, Mr. Bates believes "just as soon as the small plant can be made inexpensively enough to allow people to install air-conditioning units in their homes."


In INDUSTRY, too, CHARACTER Counts
Whatever the company, the public appraises it on the basis of its character. And we know that good character is achieved only through strict adherence to the laws of integrity, fairness and true service. We aspire to be regarded as an organization of good character. Therefore we endeavor always to earn and maintain that reputation.
UNIVERSAL COOLER CORP.
DETROIT, MICHIGAN
BRANTFORD, ONTARIO
UNIVERSAL COOLER
The policies expressed in the above advertisement published seven years ago are in no small measure responsible for the progress of this company. These same policies are being followed today.

For Your Convenience and Profit!

✓ marks the Spot • • • •

where you can get PROMPT DELIVERY from stocks

DU PONT Artic The Preferred METHYL CHLORIDE for Service Work

DU PONT E. I. DU PONT DE NEMOURS & COMPANY (INC.) · The R. & H. Chemicals Department · Wilmington, Delaware
District Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

Anemostats Installed In Street Cars

NEW YORK CITY—Recent installations of Anemostat high velocity air diffusers in the transportation field include those used for ventilation in 95 new lightweight streamlined street cars, placed in service for the Capital Transit Co. of Washington, D. C., reports F. J. Kurth, vice president and engineering director for Anemostat Corp. of America.

Each street car is equipped with three units which have special "air scoops" to govern the amount of fresh air entering the car at any time. As the cars move along, air entering the "scoops" is forced into the diffusing outlet by means of which the car is ventilated.

Twenty-eight Anemostat-equipped motor buses have recently been placed in service by the Bowen Motor Coach Co. of Fort Worth, Tex. The cooling and heating systems used in these buses were developed by Trane.

Let a 15-inch circle of space

MAKE $13.92 Profit!

Gilmer's "Eye-ful" Tower MERCHANDISER

... your complete "on-the-counter" Belt Department

Only 15" in diameter, but packs a big *profit* wallop! Newest of Gilmer's profit-makers costs only $19.36. You get $33.28. *You net* $13.92.

DISPLAYS . . . ADVERTISES . . . MEASURES . . . IDENTIFIES THE WANTED SIZE!

Gilmer's "*Eye-ful*" *Tower* belt merchandiser consists of:

Gilmer "HANDIMETER" . . . simple to use, slide-rule type of measurer that instantly measures any belt brought in, up to 75" long and between 3/8" and 3/4" wide.

Gilmer "EYE-FUL" TOWER . . . a circular stand, 15" in diameter at the base by 32½" high . . . 8 hooks for 70 belts. Good display from any angle. Tower is topped by a high visibility display sign, on back of which is a perpetual inventory record form.

35 FAST-SELLING, EASILY IDENTIFIED BELTS for leading makes of refrigerators and other appliances.

PLUS one copy of "America's Belt Bible," the complete Gilmer Catalog, and one window display card in colors. Complete in one carton. The "Eye-ful" Tower comes ready to set up and *sell*. It does practically everything except ring up the sale!

L. H. GILMER CO.
Tacony, Philadelphia

Send me complete Gilmer "Eye-ful" Tower assortment. Bill me $19.36 through your nearest jobber.

NAME_____

ADDRESS_____

Cause and Prevention of 'Flood Back' on Systems Using Thermo Expansion Valves

2. Cause Is Poor Application of Thermo Valves

By J. E. Dube and F. M. MacDougall, Alco Valve Co.

Editor's Note: This is the second in a series of articles on the causes of "flood back" of the refrigerant to the compressor, and the methods by which this trouble can be remedied by correct engineering practices.

Highly important to the responsiveness of a thermo valve is the proper application of the remote bulb, and this leads us to **the second major cause of poor superheat control and consequent** "flood back," namely, the faulty application of thermo valves.

Obviously, the highest degree of responsiveness of a thermo valve is obtained by the use of an insert type bulb. For reasons of convenience and serviceability, however, externally applied bulbs are used in the majority of cases. These clamp-on type bulbs give entirely satisfactory service if applied in the proper manner. The method of fastening, as well as the choice of bulb location, are of utmost importance.

Before clamping an external remote bulb to any surface, that surface should be cleaned thoroughly with an abrasive. Further precaution must be taken that the remote bulb makes good contact throughout its entire length with the suction line, after the clamp has been tightened up. The suction line and bulb should then be thoroughly insulated to increase bulb response to suction gas temperature and to minimize response to surrounding room temperature.

Good insulation becomes of particular importance in preventing "flood back" at the beginning of the on period of the refrigerating cycle. Let us assume that the thermostat controlling the compressor operation has been satisfied and the compressor has been shut down. Pressure will build up immediately in the evaporator and, after a rise of several pounds, a well designed thermo valve will shut off the flow of refrigerant to the evaporator. The closing action of the increased evaporator pressure will be opposed, however, by the increased opening tendency caused by the warming up of the remote bulb.

Obviously, a well insulated bulb will remain cold for a longer period of time, thus permitting the evaporator pressure to close the valve during the off cycle. It is well to bear in mind that any thermo valve, be it of the liquid or gas charged type, while operating normally, is actuated by the same basic forces.

Consequently, the remote bulb of a gas charged valve must be installed and insulated with equal care in order to prevent premature opening of the valve during the off period.

The point of application of the remote bulb preferably should be on a horizontal run of pipe since this position has been found more satisfactory than the vertical application. Liquid refrigerant might pass near the center of a vertical pipe and have little effect on the temperature of a clamp-on type remote bulb.

Furthermore, the remote bulb should never be applied to a heavy section of the outlet header or any other heavy mass of metal since the high thermal lag of such a mass will

(*Continued on Page 11, Column 1*)

Incorrect Remote Bulb Application

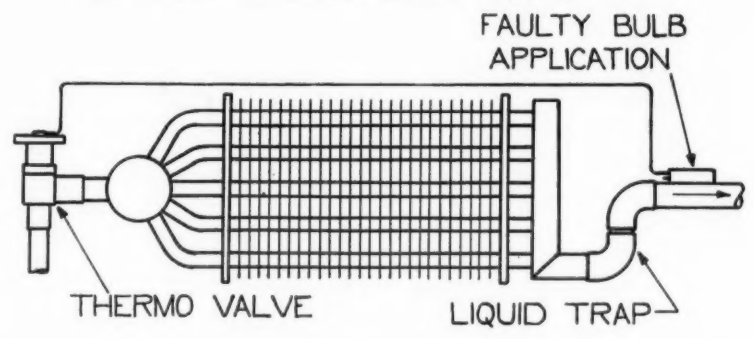


Fig. 3—Location of the remote bulb near a liquid trap will cause a "hunting condition" with resulting flooding and reduced capacity.

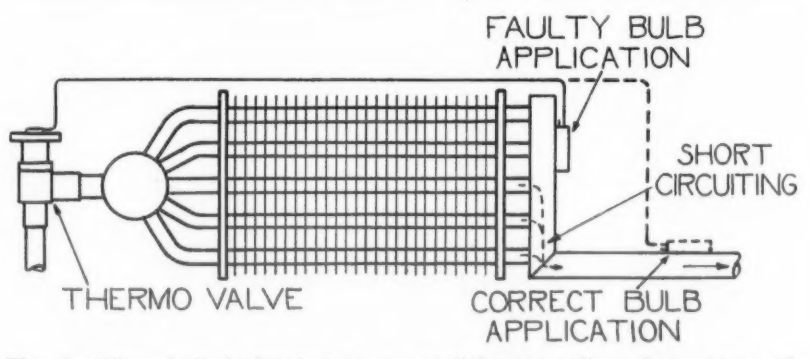


Fig. 4—When bulb is located on a parallel pass coil as here, some of the passes may short circuit the bulb.

Watch the Wipe

ON SQUARE D CLASS 9110 REGULATORS FOR COMMERCIAL REFRIGERATION

● Class 9110 Regulators provide positive wiping action to eliminate contact sticking and welding, thus assuring positive cut-out.

Other features include all-steel construction, extraordinary wiring space and four-position mounting. *Write for Details*

Jobber Inquiries Invited

SQUARE D COMPANY
REGULATOR DIVISION
DETROIT · · MICHIGAN

In New Jobs At Norge

H. M. CAMPBELL

ROY B. BLANCHARD

* * *

Campbell, Blanchard Advanced By Norge

DETROIT — H. M. Campbell has been advanced to the position of sales manager of the Norge heating and conditioning division.

He has been a member of the Norge sales organization for the past five years, working on sales development for the heating and conditioning division. Experienced in the heating and air-conditioning field, he is well known to the Norge distributing organization.

Mr. Campbell introduced the new Norge model 120 furnace to distributors and heating jobbers, and will direct an expanded selling program for this product.

In other organizational changes, Roy B. Blanchard has been added to the Norge sales promotional staff, and E. L. Froelich has been recalled from Warren-Norge Co., New York City distributor, to take over a special representative post with the factory.

Mr. Blanchard was associated with Buick Motor Co., Flint, Mich. for 12 years as assistant advertising and sales promotion manager, and later was in charge of advertising for Graham Paige Motor Corp. and account executive with Grace & Bement advertising agency, Detroit.

He comes to Norge from R. L. Polk & Co., where he was associated with direct-mail advertising work.

Mr. Froelich, for a number of years head of the sales organization of Warren-Norge, joined the Norge factory force in 1938 as eastern sales manager. He had returned to the Warren-Norge organization only a few months ago. In his new post, he will handle special assignments from the factory.

Mellon Institute To Study Filters

PITTSBURGH — Dr. Edward R. Weidlein, director of Mellon Institute, has announced the establishment of an industrial fellowship in that institution by Fleming Mfg. Co., Providence, R. I., to study the design, construction, and operation of oil filters. Dr. Glenn O. Ebrey has been appointed to the incumbency of the fellowship.

Mills Offers Manual On Beverage Dispenser

CHICAGO—"It's Alive!" says Mills Novelty Co. of its coin operated bottled Coca Cola dispenser in a new 62-page presentation of this product. And the booklet goes on in an attempt to prove this statement by citing the enthusiasm with which installation of these units has been greeted in college buildings and factories, or textile mills and department stores.

Starting off with a dissertation on the development of the product, and with statements by Fred L. Mills, president, and Jack Walsh, general sales manager, of the Mills organization, the brochure continues with an exposition, largely pictorial, of just how these dispensing units are fabricated in the Mills plant, from the time they are laid out on the drawing board until the completed product is inspected and shipped.

Next follows an outline of the plan of operation recommended for these coolers by the Coca Cola Co. After this comes page after page of installation photographs, showing the dispensers in actual operation in all sorts of establishments, a cross-section list of places in which some 10,000 of these dispensers have been installed, and testimonial letters from companies using these units.

There also is a section in which various outstanding features of the machine are illustrated and described.

In the center of the booklet is a four-page color insert showing the three models of this dispensing unit in their standard red and green enamel with chrome trim.

RINGSIDE REPORT ON

MR. REFRIGERATOR DEALER

VS.

MRS. REFRIGERATOR OWNER

Mr. Dealer is down, folks, he's almost out . . . he's just tried to explain to that woman that her refrigerator is really in A-1 mechanical shape, that a little valve trouble is caused by a trace of moisture which it is impossible to get out of intricate passages of the unit, even with the most careful baking and assembly. She's just floored him with "But it is broken . . . it's no good . . . !"

Do you want him to take the count? A simple little cartridge of Activated Alumina will rescue him inexpensively. Such cartridges, built into the system, trap and hold moisture, remove acidity, prevent trouble. Service men swear by Activated Alumina. Built-in cartridges are a success on certain makes. Aren't they a logical protection for the good will of your machine, and the service budget too? ALUMINUM ORE COMPANY. (*Sales Agent:* ALUMINUM COMPANY OF AMERICA, 1908 Gulf Building, Pittsburgh, Penna.)

ALORCO

ACTIVATED ALUMINA

PREVENTS CLOGGED REFRIGERATOR VALVES

How Valves and Controls Can Be Combined Properly To Prevent 'Flood Back'

(Continued from Page 10, Column 5)

obviously reduce the responsiveness of the remote bulb.

Among the most prevalent examples of poor bulb application is the location of the remote bulb at or near a liquid trap. Fig. 3 illustrates a typical example of such a misapplication. Liquid accumulates in the trap, as indicated, and intermittently "pops" over into the suction line. Since there is bound to be some lag between the occurrence of this liquid "popping" and the repositioning of the valve, the control is going to start "hunting" and the flooding condition may actually be aggravated. Obviously, the "hunting" of the thermo valve will also reduce the coil capacity.

CAUSE OF 'SHORT CIRCUIT'

Fig. 4 illustrates another common example of faulty bulb application on a parallel pass coil. The bulb is applied in such a manner that the return of some of the passes may short circuit the remote bulb.

Let us assume that the remote bulb is being short circuited by a pass which receives too much refrigerant due to imperfect distribution or uneven loading. The liquid refrigerant will then return to the compressor without passing by the remote bulb and consequently the bulb cannot respond by attempting to close the valve. The inevitable result is "flood back."

If, on the other hand, the remote bulb is being short circuited by a pass receiving insufficient refrigerant, it likewise won't respond to attempts to open the valve, and consequently the coil capacity will suffer.

Frequently an attempt is made to obtain full coil capacity by lowering the superheat dangerously near to the flooding through point or in some cases remote bulbs have actually been insulated from the suction line in order to further the opening of the valve. Obviously, both methods are entirely wrong, the only proper approach to these problems being an intelligent relocation of the remote bulb.

ON PARALLEL PASS COIL

The remote bulb of a thermo valve controlling a parallel pass coil should always be located on the common suction line after all passes have been joined together in a common suction header or manifold.

In order to avoid serious "flood back" at the start of the on period of the refrigerating cycle, it is important to prevent undue accumulation of liquid refrigerant in the evaporator during the off cycle. In order to accomplish this it is necessary to insure a tight closure between the high side and the evaporator.

As previously explained, when the compressor stops, the subsequent pressure build-up in the evaporator tends to close the thermo valve, and a well designed and properly constructed valve in good operating condition will actually close off tightly. Large capacity thermo valves, however, and particularly double seated valves, do not close off as tightly as small and medium sized valves.

Futhermore, regardless of larger power assemblies the pressure build-up required to close a large capacity valve is usually greater than consistent with desirable shut off characteristics. Thermo valves which are installed on dirty, moist, and particularly short-charged systems, suffer greatly in service and, although they may still be operative during the running cycle, they cannot be expected to remain tight indefinitely under such conditions.

USE OF STOP VALVES

The best insurance against "flood back" caused by leaky thermo valves at the beginning of the running cycle is the use of magnetic stop valves. These valves must be installed in the liquid line ahead of the thermo valve.

Fig. 5 illustrates a typical installation of three coils equipped with individual thermo valves and a master shut-off valve. This magnetic shut-off valve is connected in series with the thermostat and high-pressure cut-out and consequently the valve is shut down when the compressor is not running.

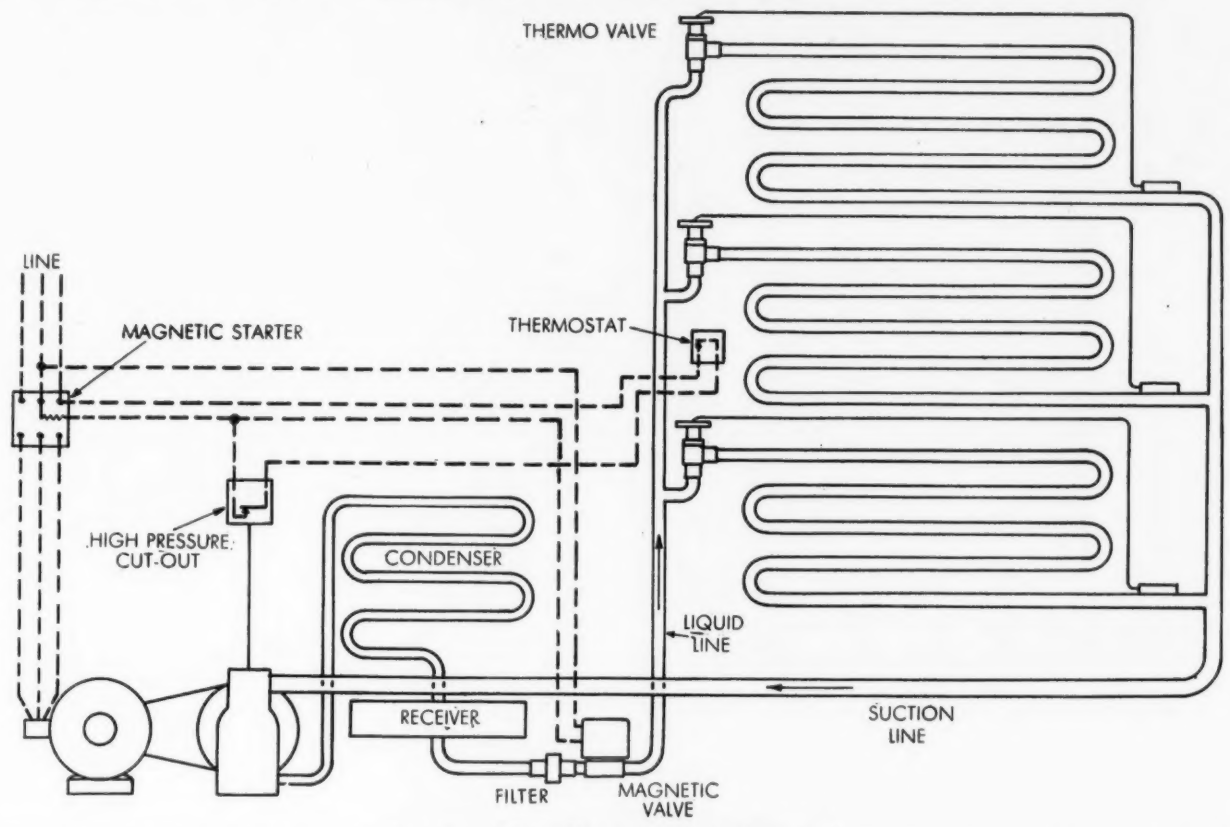
Fig. 6 illustrates another popular combination of refrigeration controls which has proven very satisfactory in actual practice. In this case the magnetic shut-off valve is controlled directly from the thermostat. High coil efficiency is maintained by properly applied thermo valves which prevent the return of liquid refrigerant to the compressor. The compressor itself is controlled by a pressure switch in the suction line.

After the thermostat has been satisfied and has closed the magnetic stop valve, the compressor will continue to run until a pre-determined minimum evaporator pressure has been reached at which the pressure switch will cut out.

This system of control is obviously among the best in regard to "flood back" prevention either at the beginning or during the running cycle. In addition this control system will materially aid the defrosting of the evaporator in low temperature work.

Still another very desirable feature of this system is the storing of substantially the entire charge in the high side during the off cycle. This is of particular importance from the safety point of view on large direct air-conditioning installations in public buildings.

Fig. 6—Where Thermostat Controls Magnetic Shut-Off Valve



A refrigeration control hookup in which the magnetic shut-off valve is controlled directly from the thermostat, with properly applied thermo valves preventing the return of liquid refrigerant to the compressor. After thermostat is satisfied and stop valve closes, the compressor runs until a minimum evaporator pressure has been reached.

Pottsville Firm Moves, Takes New Lines

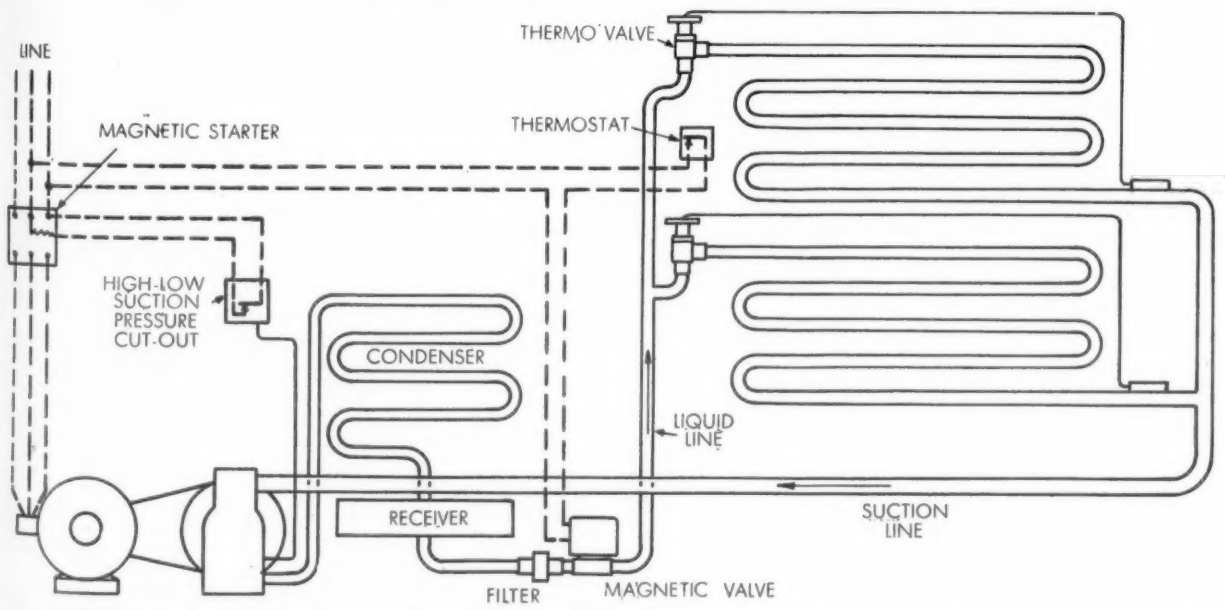
POTTSVILLE, Pa.—General Sales Co. has announced its appointment as direct factory distributor in this territory for General Refrigeration Co., Beloit, Wis., and Temprite Products Corp., Detroit.

The company also has announced its removal from its former location at 123 S. Centre St. to a building of its own at 1957 Market St.

Brown Directs Fedders Southeastern Sales

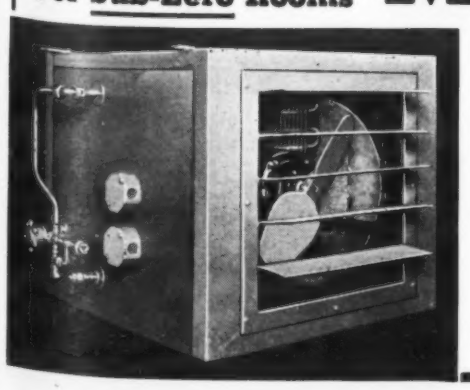
ATLANTA—Austin L. Brown is now in charge of Fedders Mfg. Co.'s southeastern territory of Georgia, Florida, Alabama, North and South Carolina, and eastern Mississippi.

Fig. 5—Where Shut-Off Valve Is Connected In Series



Typical installation showing three coils equipped with individual thermostatic expansion valves and a master magnetic shut-off valve, which is connected in series with the thermostat and high-pressure cut-out.

For Sub-Zero Rooms **MARLO** *Low Temperature Unit Coolers*



The use of Electrical Heaters for quick defrosting of refrigeration coils was originated by this company and has been a feature of Marlo Low Temperature Units for a number of years.

By merely closing a switch, perfect defrosting is completed in 15 to 20 minutes.

You don't even have to remove contents of room—and no engineer is required. There is never the heavy accumulation of frost that occurs with other types of coil installations, thus assuring maximum efficiency at all times.

Marlo Units with automatic defrosting are available.

Marlo Low Temperature Units harden ice cream in ⅓ the time required by other coil installations. Temperatures as low as 20 degrees below zero may be had if desired.

Send for Special Bulletin No. 392.

Marlo Coil Co., 6135 Manchester Ave., St. Louis
Canada and British Isles: Universal Cooler Co., Brantford, Ontario
Manufacturers of Complete Line of Low Side Equipment W-IR4

BUNDY TUBING

Uniformity of wall thickness is an important quality

BUNDY TUBING CO.
DETROIT

Air Conditioning

Contractors Fight 'Fire Prevention' Code On Ducts as Unwarranted Cost Booster

(Concluded from Page 1, Column 1)

2. Non-combustible duct linings.

3. Filters which are not combustible.

4. Non-combustible duct insulation in certain places.

5. Provisions to prevent spread of smoke in multiple occupancy buildings.

6. Proper maintenance of equipment after installation.

The speaker stated that the present amendment to the Detroit Building Code was being presented for discussion, argument, and criticism, but that it provided only what seemed to be necessary after consultation with organizations and agencies interested. Mr. Emery made it clear that the code was being developed under the power and authority of the City of Detroit and that it would be enforced where necessary by police powers, in order to protect the public safety.

Scope of the proposed code is all commercial and industrial buildings. Forced warm air systems in residences are covered by a separate code. Protective devices are not required in systems which serve one room systems in rooms under 5,000 square feet.

For the purpose of this code an air-conditioning system is defined as "a duct system employing a mechanical means of supplying recirculated air."

Salient provisions of the code are:

Ductwork—shall be constructed of incombustible materials.

Flexible connections—shall be made of incombustible materials. (Canvas connections are prohibited.)

Duct linings—Slow burning or incombustible where ductwork is concealed—semi-combustible elsewhere.

Filters—multiple occupancy buildings require incombustible filters; others slow burning; oil filters prohibited.

Installation provisions in the new code require:

Metallic ducts shall be kept 2 inches away from any wood or other combustible material.

Inlet grilles shall be located 1 inch above the floors and protected by a fine mesh grille.

Fresh air intakes shall be located well above ground line.

Exhaust openings shall be high enough to prevent nuisance.

Rooms or attics used as ductwork, for return air, shall be lined with metal.

Ducts passing through floors shall be enclosed in masonry and equipped with fire doors, in systems passing through two or more floors in three or more stories, in new buildings. Existing buildings require that ducts passing between floors have the same kinds of enclosure used for other vertical shafts in the building.

(Mr. Emery stated that many air-conditioning systems were being designed to serve one floor at a time, which would prove a solution to the above problem.)

The provision covering fire doors and fire dampers defines a fire door as a means to "restrict or prevent the spread of fire" and a fire damper as a means to "hinder fire and prevent smoke."

Fire doors must be built in accordance with the requirements of Underwriters' Laboratories which call for a wood frame covered with sheet metal.

Fire dampers shall be single bladed up to 16-square feet and multiple in larger sizes. Operation shall be automatic in case of fire. Dampers are required across main return duct where it enters the plenum chamber, where a horizontal duct leaves a vertical duct enclosure, and where a duct passes through a fire wall.

Protective devices required in the new code include a blower shut off, a blower switch in a readily accessible place, and a high limit control where system has a direct-fired heater.

SMOKE DETECTOR

Multiple occupancy buildings shall be equipped with a smoke detector which Mr. Emery characterized as a "device which becomes operative in the presence of smoke" which is "not at all expensive." The speaker asserted that these devices could be obtained from the A. D. T. Co. on a rental basis or could be purchased outright from others at a "nominal cost."

Mr. Emery stated that smoke detectors were not required under any air-conditioning code or ventilating code in existence in the country at present but they were recommended by (fire insurance) "authorities."

Sprinklers are required where semi-combustible filters are used.

Under the new code owners are required to keep air-conditioning duct systems clean and free from rubbish. Large ducts must not be used for storage or any other purpose. Mechanical devices must be inspected and adjusted regularly to be kept in good working condition, and torches or open flames are not to be used near combustible materials. Mr. Emery pointed out that a number of air-conditioning system fires had started while service work was in progress. Merchandise shall be kept 6 inches from the exposed ducts.

ENFORCEMENT

For proper enforcement of the new air-conditioning code all firms in the business must be licensed and bonded. A license fee of $25 has been established and a penal bond of $5,000 is required. Licensees must pass an examination proving their right to engage in the air-conditioning business and labels must be posted on all jobs showing the name and address of the contractor making the installation.

Constitutional rights are preserved by a provision which permits owners to install equipment in their own buildings without having a license. These owners are under the jurisdiction of the code, however.

REGISTERED ENGINEERS

Opening the discussion which followed Mr. Emery's talk, S. A. Witt, of Kelvinator Corp. asked if all plans filed with the department for air-conditioning systems must bear the stamp of a registered mechanical engineer.

Mr. Emery stated that this was required under Michigan state law and the city authorities had no jurisdiction. Exceptions are residential buildings costing less than $15,000; owner filing plans for his own building and public works costing not over $2,000.

R. C. Doremus pointed out that the building department was in the habit of accepting plans on refrigerating systems from any licensed contractor. Mr. Emery declined to answer for the department, stating that he had nothing to do with refrigeration.

L. W. Childs, air-conditioning specialist for Evans Products Co., Detroit, objected to the speaker's statement that "use of recirculated air is new." According to Mr. Childs, this method has been used in ventilating systems for "over 100 years" and backed up his assertion with the statement that "My father installed over twenty carloads of sheet metal work in one building prior to 1900."

Mr. Childs wanted to know how many fires had occurred in buildings equipped with "recirculated air systems" in the past 100 years, and stated that the proposed code would require a "Philadelphia lawyer" to keep everything straight. "If this is the case," Mr. Childs asked, "and systems of this kind have been used for many years, why pick on us now?"

Mr. Emery replied that air-conditioning systems had only come into vogue in recent years and that "authorities" (presumably fire insurance companies) have seen the need for regulation. The speaker pointed out that a disaster in an air-conditioned building would tend to swing the pendulum of public opinion "the other way" and that the industry would then find itself saddled with restrictions not dreamed of now.

VENTILATING NOT NEW

Mr. Childs replied that use of recirculated air systems is not new and that many systems were in use prior to 1900. Based on past experience, Mr. Childs said, the situation did not require the "Seventh Heaven of Safety" called for in the Detroit code.

To this Mr. Emery replied that "we did not have recirculating systems until recent years and we know that certain standards have been recommended" (by "Authorities") and that "the code, with slight revisions, would go through as written."

L. S. Morse, Jr. of Westerlin & Campbell, Detroit, stated that in his opinion the proposed code called for the use of a number of "overlapping" safety devices and that the use of the "smoke detector" alone, might accomplish the purpose of preventing the spread of any fire or smoke. His idea was that systems were being "loaded" to get the desired results.

Mr. Emery pointed out that while smoke detectors will stop the equipment in the presence of smoke, that the blower control will operate by heat and that dampers on the main return duct will tend to protect the apparatus in case of fire.

"I am not going to become a target for complaints," Mr. Emery continued. "In a discussion of this kind I want to be backed up by conservatives and the fire protection men."

WHERE THE CODE HURTS

Mr. Morse replied that he knew that not all devices were required on every system and that from his experience the building department was not asking for all of the devices, but pointed out that this "reasonable intrepretation" was not mentioned in the code.

S. S. Sanford, air-conditioning specialist for the Detroit Edison Co. and a member of the air-conditioning committee of the National Fire Protection Association, stated that there is "evidently a need for some kind of a code, but there is considerable question as to whether or not the code should go as far as it does." Mr. Sanford felt, however, that "a lot of the provisions of the code were reasonable."

Bruce Palmer, of the Palmer Electric Co., said that he did not like the "increasing amount of regulation planned on the other fellow's business" and cited the provision (in the state law) requiring that plans be drawn for an air-conditioning system by a registered architect or professional engineer.

"Only a few architects in Detroit have capable air conditioning or refrigerating engineers in their organizations," Mr. Palmer said. "Air-conditioning firms do not like to take their plans to architects because of the danger of information leaks. No code should bring in the necessity of calling in other trades," Mr. Palmer asserted.

EX POST FACTO LAW?

R. C. Doremus of Detroit Ice Machine Co. asked Mr. Emery why provisions in the code were more stringent for new buildings than existing buildings and how far the code would go in the application of safety requirements to air-conditioning systems now in use.

Mr. Emery replied that while all systems would require blower shut offs—multiple occupancy buildings would require smoke detectors and other inexpensive safety features.

William Heaney, of American Refrigerating Co. which specializes in theater and commercial air conditioning, said he understood that smoke detectors cost from $750 to $1,000.

Mr. Emery replied that the equipment had "no cost whatever" in proportion to the cost of the system, which, in itself, would cost four or five times as much as the safety equipment.

Mr. Heaney wanted to know what the cost of a smoke detector would be on a "small multiple occupancy building equipped with a 10-ton system."

Mr. Emery stated that "a man was in the other day with a smoke detector that would sell for $75."

Mr. Heaney asked if these units were "approved by Underwriters' Laboratories?"

Mr. Emery replied that other equipment could be "rented," giving no direct answer to the question.

Mr. Heaney inquired, "For how much money?"

E. D. Gifford, of Airtemp Construction Co., stated that the smoke detecting system in use in Kerns Department Store cost about $350 to install, with a yearly rental of $100 or $150. Fire dampers were also installed, the total cost for the first year being about $1,200.

Mr. Emery stated that he would consider $1,200 "a very nominal cost."

Mr. Heaney insisted that the new code was "now being enforced" and said that he was afraid opposition would develop from the building owners of Detroit, "who are adding up the cost" of the new provisions at the present time.

Next meeting of the A.S.R.E. will be Nov. 20, 1939 when an "Old Timers Reunion" will bring out several speakers who were responsible for the design and early development of many refrigerating machines.

THE BUYER'S GUIDE

KASON
FORGED
BRASS
LATCH
(No. K-72)

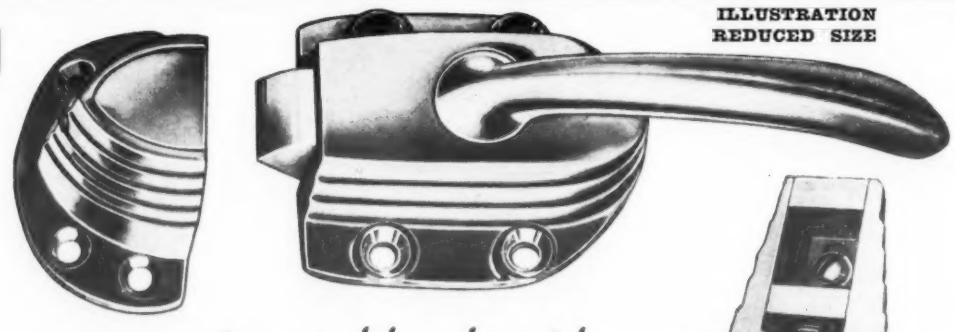
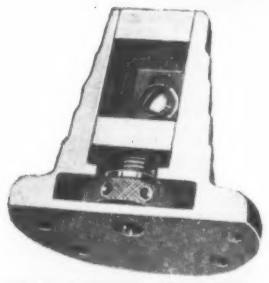


ILLUSTRATION REDUCED SIZE



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A turn of the screw raises the strike in its socket making possible automatic, offset adjustments of hair-line fineness.

Featuring a new adjustable handle

The handle of this latch can be automatically adjusted to point upward, outward or downward. Artfully drawn in modern streamline design and ruggedly constructed of Forged Brass, this remarkable latch is acknowledged to be the most beautiful and finest latch serving commercial refrigerators.

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THE Name RANCO on any household or commercial refrigerator control is complete assurance of dependability and long life. It is the pledge of precision performance—made by the world's largest manufacturer of refrigerator controls.

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THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
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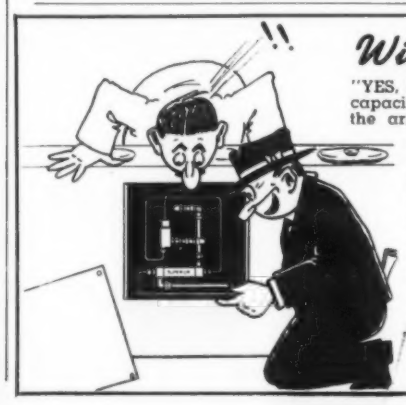

Without Cutting Cork?

"YES, SIR! Our engineers designed the inside to get the capacity. Ice Cream Cabinet refrigeration men specified the arrangements of fittings and connections. Result—SUPERIOR ECONOMIZER (Heat Exchanger) No. 681—compact; low in cost; high in capacity. Easily installed in the service opening of ice cream cabinets . . . without cutting away valuable insulation."

A natural for ice cream and other low temperature cabinets.

Write for Bulletin R7. It contains valuable information on heat exchanger application.

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Service Methods

Servicing the Grunow Refrigerator Unit

How To Check Parts of the 1937 Electrical System; Illustrations of Some Service Methods

Editor's Note: This is the fifth of a series of articles on the servicing of Grunow refrigeration units taken both from the official factory service instructions, and also from information furnished by men in the field who have specialized in work on Grunow units.

Thermostat In 1937 Models

The thermostat on the "W" type refrigerators is of different design than those on previous models.

Function of the thermostat is to maintain a predetermined uniform temperature range in the refrigerator food compartment.

This uniform temperature is secured through the action of the thermostatic control, which automatically makes and breaks the electrical contact between silver points, starting and stopping the refrigerator unit whenever necessary, thereby maintaining the desired food compartment temperature to a very constant degree.

The contacts on this switch are actuated by a gas filled bellows container on the thermostat case. The bellows container is connected by means of a small tube to the thermostat bulb, which is in direct contact with the side of the evaporator.

As the evaporator cools, the gas in the thermostat bulb contracts, reducing the pressure on the bellows, allowing it to expand and open the silver contact points, stopping the refrigerating unit. As the bulb becomes warmer with the evaporator, the pressure on the bellows increases, contracting the bellows until the silver contacts again close and start the refrigerating unit.

The thermostat is of the "wide-cycle" type having 14 operating positions including "Defrost," "Rapid Freeze" and "Off."

This new thermostat does not contain an overload trip, its only function is to regulate the temperature in the food compartment. The overload trip or protector has been placed in the incoming a.c. line in such a position that it works automatically —see overload protector.

Adjustment of Thermostat

The thermostat on 1937 models is so adjusted when the temperature control knob is set on the normal or No. 2 setting, as to maintain a food compartment temperature between 41° F. and 44° F. with a room temperature of 80° F. at sea level. The higher the altitude the lower the atmospheric pressure, and the lower the food compartment temperature for a definite thermostat setting. A decrease of one inch in the barometer reading will correspondingly lower both the on and off settings of the thermostat bulb temperature about ¾° F.

If the thermostat ever need be adjusted for too cold or too warm a food compartment temperature, always proceed as follows:

1. Obtain the food compartment temperature by submerging a thermometer in some liquid which has been in the food compartment while the refrigerator has been in normal operation with the temperature control knob set at the No. 2 position for at least the last 12 hours.

2. Remove the escutcheon from the temperature control knob and loosen the screw beneath, being careful not to turn the knob.

3. To raise the food compartment temperature, turn only the loosened knob toward the No. 3 position, one position for each 1½° F. warmer the food compartment temperature is desired. Then tighten the screw, replace the escutcheon and turn the knob back to the No. 2 position.

4. To lower the food compartment temperature, turn only the loosened knob toward the No. 1 position, one position for each 1½° F. colder the food compartment temperature is desired. Then tighten the screw, replace the escutcheon and turn the knob ahead to the No. 2 position.

5. Following are the thermostat bulb temperature specifications for positions:

(a) Defrost, on at 42° F.
(b) No. 1, on at 30° F.
(c) No. 1, off at 18° F.
(d) Rapid Freeze, off at 2° F.

Testing the Relay

1. Raise the relay plunger by hand, checking to see that it has sufficient free travel to cause the contact points to touch.

2. Install line cord in the electrical outlet, at this instant the relay plunger should rise to the starting position. If not, the main circuit of the refrigerator is open or improperly connected. Make sure the thermostat and overload protector circuit is closed, the electrical outlet has the proper voltage and the relay coil does not have an open circuit.

3. If the motor does not start with the relay plunger up, short the relay contacts electrically. If this starts the motor, the contact points must be cleaned, so as to make the proper electrical contact.

4. When the motor is up to speed, the relay plunger should drop to its running position. If not, the current being drawn is excessive or the relay plunger is held up by some physical obstruction.

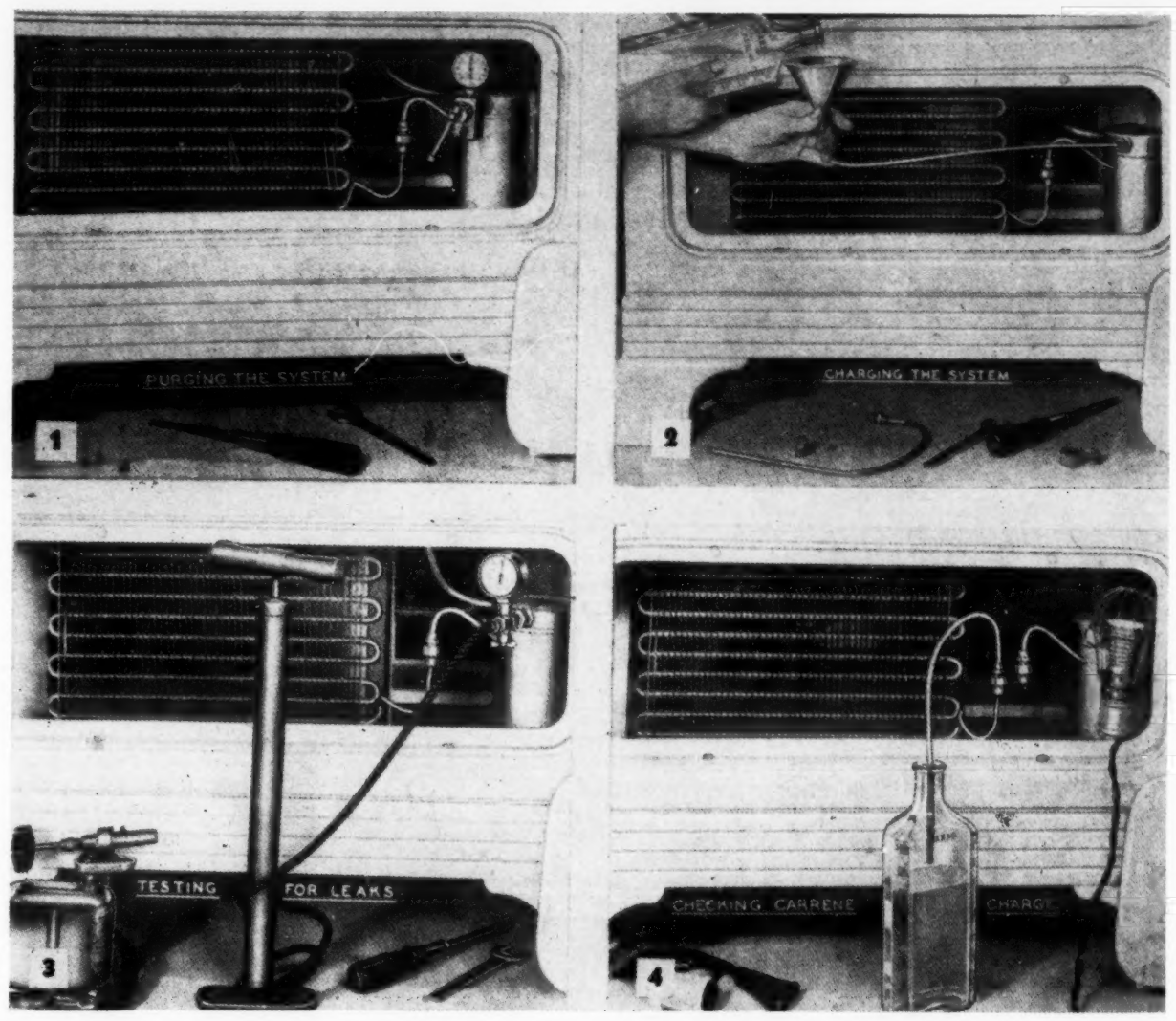
Testing the Capacitor

1. Disconnect the leads from the capacitor to the transformer.

2. With another line cord, connect the capacitor in series with a 25 watt, 115 volt lamp to the electrical outlet. The lamp will light up brightly if the capacitor is shorted, dimly if O. K., and not at all if open.

3. With d.c. continuity meter, check for any ground between the terminals and container.

Illustrating Some Service Operations on Grunow Units



The above illustrations show some of the checking and service operations on Grunow refrigeration systems which use the Carrene meter.

(1) Setup for purging the system, showing the purge tool with its gauge attached to the meter-receiver. When the pressure on the gauge (with machine running) reaches from 7 to 9 lbs., the outer purge valve is opened for about three seconds, allowing the air to be expelled. This is repeated several times.

(2) To charge the system, a 3/16 inch copper tube with a funnel at its opposite end should be fitted into the purge opening on the meter receiver, and about half of the charge poured into the receiver. The compressor should then be started and stopped quickly several times, and then the remainder of the charge poured in.

(3) In testing for leaks a leak test fitting is installed on the receiver, and then a hand (or tire) pump is attached to the leak test fitting. About 60 lbs. air pressure should be pumped into the system. Extent of the leaks can be determined by watching the rate at which the pressure decreases, and may be found by use of a Halide torch. After test apparatus has been removed, system should be purged.

(4) Method of checking the Carrene charge. The connection between the condenser and the receiver is broken, and tubing is run from the condenser to the 32-oz. bottle shown. The purge core on the meter-receiver is sealed. The electric heater shown is first used on the bottom shelf of the evaporator (not too close to the thermostat) to heat up and vaporize the refrigerant in the evaporator, and later is placed alongside the meter-receiver as shown to vaporize the refrigerant there.

New Soldering Flux For Aluminum Introduced

PHILADELPHIA—A new type of flux for tinning aluminum and other metals, including cast iron, has been developed by American Solder & Flux Co. "Amco" aluminum flux, as the material is called, is claimed not only to dissolve the oxide on the metal to be soldered, but also to coat with a metal to which ordinary tin and lead solder will adhere readily.

Aluminum solder may be applied to the coated surface without any further preparation, it is said. The flux may be used with any clean source of heat, as well as with an ordinary soldering copper.

Peerless Pump Issues Engineering Data

LOS ANGELES—Peerless Pump division of Food Machinery Corp. has recently issued a 64-page spiral bound catalog covering its complete line of products, including water and oil-lubricated turbines, propeller and mine pumps.

Hydraulic engineering data also is included in the catalog, with 38 installation views.

Kelvinator N. Y. Salesmen Win Institute Diplomas

LONG ISLAND CITY, N. Y.—Seventeen members of the Kelvinator sales organization in this territory have been graduated with honors from Kelvinator's National Salesmen's Institute. These men are:

Theodore R. Harvey, Suffern, N. Y.; Chester J. Crell, New York City; Joe L. Bruno, Coscob, Conn.; C. R. Bagg, Glen Rock, N. J.; August H. Fischer, Elmhurst, N. Y.; George Seaman, Greenwich, Conn.; Eloise Budde, New York City; R. L. Hoeffler, Floral Park, N. Y.; Ray Kline, White Plains, N. Y.; John W. Banks, Port Chester, N. Y.; and Michael J. Catalano, Harold Greenberg, Joseph A. Haubrick, W. H. Steiner, V. Carpenter, A. E. Podesta, and J. E. Blake, all of Brooklyn.

WOLVERINE TUBE COMPANY
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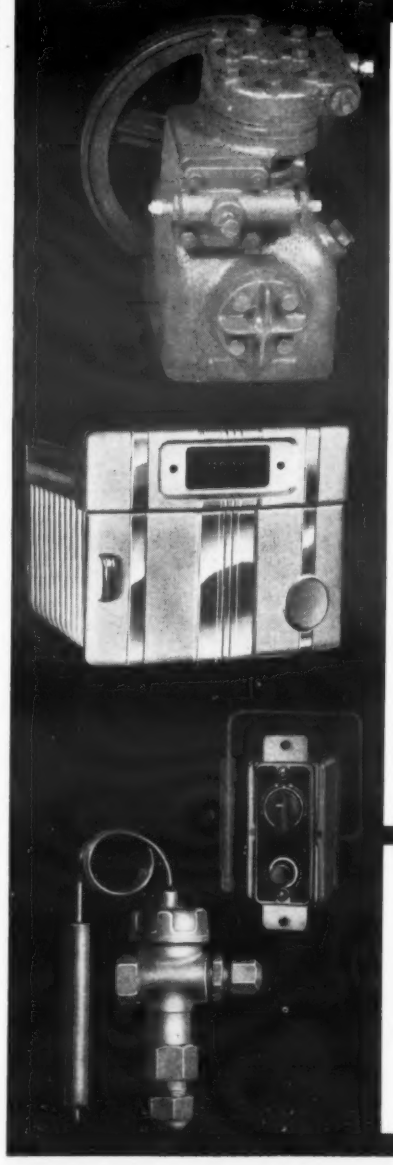

KELVINATOR appreciates that winter selling of refrigeration supplies presents difficult problems. To meet them Kelvinator has a special Winter Profit Program that assures a practical, businesslike approach to these problems.

First—this new program offers you a *special low price deal* on complete "packages" of new household refrigerator parts for GENERAL REPLACEMENT.

Second — this program includes a simple, down-to-earth plan of action that points the way to new business for you—at a profit.

This Winter Profit Program is available to every refrigeration service company. It's new—it's different—it's general in application. Why not get complete information—there's no obligation on your part. Just fill out and mail the coupon.

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REFRIGERATION SUPPLIES

★ C O U P O N ★

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Parts Sales Department
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I'd like to have complete information on your Winter Profit Program.

Firm Name.....
Street Address.....
City..... State.....
K-64

Sept. Air-Cooling Sales In Chicago Set Record

(Concluded from Page 1, Column 3)

totaled 198 hp., compared with 201 hp. last year.

September central-plant installations were divided as follows:

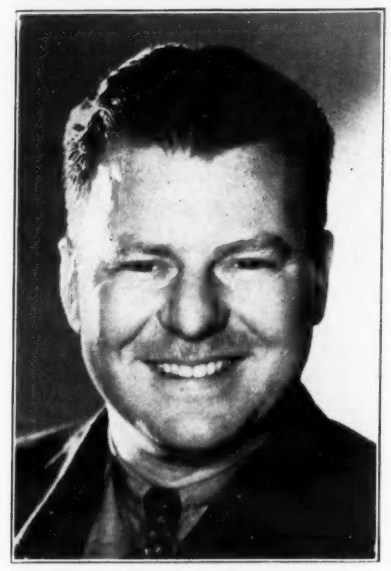
Restaurants	3
Drug Stores	3
General Offices	2
Private Offices	2
Food Stores	2
Bakery	1
Candy Store	1
Photo Studio	1
Theater	1
Total	**16**

Duff Will Manage Viking Production

CLEVELAND — Forrest L. Duff has been appointed production manager of Viking Air Conditioning Corp., manufacturer of air circulating equipment, and assistant to Arthur Bennekamper, plant manager.

Prior to joining Viking, Mr. Duff was a power engineer at Hammermill Paper Co., and served in the production control department of Goodyear Tire & Rubber Co. For two years he was instructor in machine design and kinematics at Penn State Extension College, Erie.

Berk Leaves Getchell To Form Agency



HARRY A. BERK

* * *

Harry A. Berk, well known to the Chrysler Airtemp organization as vice president of the J. Stirling Getchell agency, has resigned that position to open his own advertising agency on the twenty-eighth floor of the Graybar building in New York City. With the Getchell agency Mr. Berk was successively director of public relations, promotion activities, radio, copy, and in charge of new business. His advertising agency will be known as Harry A. Berk, Inc.

Coil Concern Formed By Riordan & Sewell

(Concluded from Page 1, Column 2)

of Larkin Refrigerating Corp. and Larkin Coils, Inc. Mr. Riordan has been associated with the refrigeration industry for a number of years, and was first president of the Masters Association of New York State.

Air-conditioning department of the organization is in charge of T. J. Charles, who has been associated with the heating, ventilating, and air-conditioning industry for the past 27 years, both in sales and engineering capacities.

Mr. Charles pioneered the first sale and installation of "Freon" equipment for Westinghouse in the New York metropolitan territory, and is experienced in all branches of air conditioning.

The company's plant here is equipped with machinery and tools necessary to manufacture all types of coils and auxiliary equipment for the refrigeration and air-conditioning industry, Mr. Riordan declares. A complete laboratory has been established for development and research.

Midwest Adds Space For New Production

(Concluded from Page 1, Column 3)

in the front part of the structure. A space 80 x 100 feet behind this will be used for assembling refrigeration units in the ice cream cabinets, and the rest of the building will be used for warehousing and shipping.

Production of both household and commercial Midwest units will be started soon, following completion of several factory improvements. Air-conditioning equipment (deep well) has been installed in each Dulux spray booth, two stokers have been installed in the boiler room, conveyor speed in the Dulux ovens has been increased, and seven additional heaters have been installed to handle increased capacity.

Three minor additions have been built on the north end of the factory to house insulation pulp storage, insulation packaging machine, woodworking department, wood storage, and service parts storage.

New Conservador Dealership In Carolina Town

CANTON, N. C. — Home Farm Equipment Co., operated by Dewey Pless, W. H. Smathers, and R. H. West, is now dealer here for Philco refrigerators and radios, Easy washers and ironers, and Cavalier ranges.

THE BUYER'S GUIDE

Every Food Merchant A Prospect!

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It's *OPEN!* The customer can reach right in—no doors to slide—and embodies a new principle of refrigeration (Pat. appl'd for).

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Doors — Rails — Jambs — Glazing Strips. All interchangeable. Full range of sizes for cabinet builders.

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DALLAS, TEXAS	—2211 Commerce St.
DENVER, COLO.	—1526 Ivy St.
CANADA	—1127-31 Dundas St., London, Ontario.
EXPORT	—Tecumseh Products Export Dept., 1002 Palms Bldg., Detroit, Mich.

TECUMSEH PRODUCTS COMPANY, Tecumseh, Mich.

THE ACE of Tube Cutters

• Of all the Imperial tools that are so widely used it is safe to say that the No. 174-F Tube Cutter is the "king of the crop" or the "Ace in the hole." You can buy cutters for less money, but you can't buy anything the equal of it for handling tubing work.

The tube rests against two rollers, with vertical groove, making it possible to remove flare, when desired. Brass forged body, chromium plated finish. Knurled handle. Complete with reamer.

• No. 174-F for 3/16" to 3/4" O. D. Tubing $2.75 Each

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PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

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EAGER TO PROVE my ability as sales representative or sales engineer. Commercial refrigeration and air conditioning. College graduate. Nine years' refrigeration experience with large manufacturer and reputable distributor. Experienced in contacting utilities, industrials, commercial firms, distributors, and dealers. Last three years distributor commercial manager. Young, unmarried, available immediately. Box No. 1183, Air Conditioning & Refrigeration News.

REPRESENTATIVES AVAILABLE

MANUFACTURERS REPRESENTATIVE. Refrigeration engineer and sales executive with wide acquaintance among southeastern distributors and dealers of refrigeration equipment desires to represent manufacturer in the following states: North and South Carolina, Tennessee, Georgia, Florida, Alabama, Mississippi and New Orleans. Fifteen years successful selling record merits your consideration. Box No. 1185, Air Conditioning & Refrigeration News.

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ENGINEERING SERVICE for Overseas organizations covering design and manufacturing is offered to one or more noncompetitive clients. Service consists of assisting to solve technical problems and regularly and automatically giving full information on new mechanical developments, manufacturing methods and machinery; obtaining samples; negotiating contracts, etc., especially in refrigeration, air conditioning, household appliances, automotive and aircraft. Over eight years continuous service to English and Australian organizations. References gladly given. Costs most nominal. Address Box 1184, Air Conditioning & Refrigeration News.

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COMPLETE COMMERCIAL Refrigerator line. Porcelain corkboard display cases, reach-in, walk-in and sliding door, full vision fruit and vegetable refrigerators. Originators of open top refrigerated vegetable cases. Full line extra-liberally coiled. Percival-Universal units. Established 1886. 53 years of service. C. L. PERCIVAL COMPANY, Des Moines, Iowa.

COMMERCIAL LINE refrigerator display cases, walk-in coolers, and refrigerators; also direct draw mechanically cooled beer coolers. Sell with Ehrlich Compressors or with any other make. Attractive discounts also financing arrangements to help sell. 70 years in business. Write for full information. EHRLICH REFRIGERATOR MFG. CO., St. Joseph, Mo.

SEND FOR PRICES and literature on the General 1940, all streamlined refrigerator display case. Over 40 years' experience manufacturing good commercial display cases. On a comparative price test with other makes of equal specifications, prices are lowest in the country. GENERAL REFRIGERATOR & STORE FIXTURE CO., 519 Bainbridge St., Philadelphia, Pa.

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BRAND NEW complete high sides; ⅕, ¼, ⅓ h.p. General Electric compressors with General Electric motors; Frigidaire compressors with Delco motors. Low prices, money back guarantee. MARTIN SPECTOR, 520 East 20th Street, New York City.

REPAIR SERVICE

DOMESTIC TYPE thermostatic controls reconditioned like new. Precision work by experts. Years of satisfied customers, among largest in the country. All work guaranteed. Try us and be convinced. The largest thermostatic repair service in the country. It's your guarantee. Prices on request. UNITED REPAIR CO., INC., 342 W. 70th St., New York City.

GENERAL ELECTRIC DR1 and DR2 Monitor Top units exchanged, $30.00 F.O.B. our factory. Send your defective unit. On receipt, we make immediate shipment of completely rebuilt, refinished unit with one year unconditional guarantee. Like new in every respect. Westinghouse and Servel hermetic units rebuilt and guaranteed. REFRIGERATION MAINTENANCE CORPORATION, 321-27 East Grand Avenue, Chicago, Illinois.

CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

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HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

DISPLAY CASES

Write for details of this sensational new 100% PORCELAIN Display Case line.

MIDWEST MFG. COMPANY
Galesburg, Illinois

For Information on Motors FOR ALL TYPES OF Air Conditioning and Refrigeration Equipment WRITE TO

Wagner Electric Corporation
6441 PLYMOUTH AVE ST. LOUIS, MO

GET PEAK PERFORMANCE with SPORLAN Controlled Performance VALVES

A COMPLETE LINE OF COMMERCIAL REFRIGERATORS AND DISPLAY EQUIPMENT • STAINLESS STEEL •

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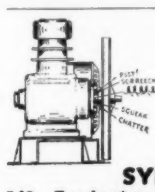
The Most Accurate Control Valve for Small Capacity Systems

The "TK" Thermo Valve
Alco Valve Co., St. Louis, Mo.



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SYNTRON CO.
140 Lexington Ave., Homer City, Pa.

PENN *Leads in* AUTOMATIC SWITCHES AND CONTROLS
Write for Catalog
PENN ELECTRIC SWITCH CO.
GOSHEN, INDIANA

DETROIT'S *Most Popular Host*

Each individual guest receives the utmost in attention and service from all members of the hotel's staff — every need and comfort is quickly and cheerfully provided. A hearty welcome awaits you at the HOTEL BARLUM.

21 FLOORS OF OUTSIDE ROOMS

ALL WITH PRIVATE TUB AND SHOWER BATHS

From $2 DAILY

HOTEL BARLUM

CADILLAC SQUARE AT BATES STREET

Sell PACKAGED AIR CONDITIONING

Lipman AUTOMATIC REFRIGERATION GR AIR CONDITIONING

DEALERS: Get the facts about the GR-Lipman line of complete, "packaged" Air Conditioning Equipment . . . portable, self-contained units for year-round air filtration and ventilation; summer cooling and dehumidification. An unlimited market; an outstanding line. Write:

GENERAL REFRIGERATION CORPORATION
Dept. AC-2 Beloit, Wis., U. S. A

Wis. Gets New Locker Plants At Oshkosh . . .

OSHKOSH, Wis.—A refrigerated locker plant having 215 30 x 20 x 17-inch lockers is being constructed near here by Mr. and Mrs. Adam Luft. The plant was expected to have been opened for operation sometime early in September.

. . . And At Antigo

ANTIGO, Wis.—Mehne & Neilson are installing a cold storage locker plant here equipped with a four-cylinder, 10-ton Baker ice machine.

To start with, the plant will have 200 lockers, but as business expands and demands make it necessary it is planned to double that number.

Locker Storages

Nebraska Locker Men Hear Professors' Recommendations For Plant Operation; Form State Locker Association

LINCOLN, Neb. — Formation of the Nebraska Refrigerated Locker Association and discussion of some of the outstanding problems facing the locker industry in this area featured the first annual conference of Nebraska locker plant operators at University of Nebraska's Agricultural College here.

One hundred people registered for this conference, approximately fifty of whom were plant operators. The meeting was opened by Acting Dean E. E. Brackett of the university's department of agricultural engineering.

Publicizing of locker storage plants, their functions, and their usage was discussed by Wm. J. Loeffel of the school's animal husbandry department.

4-H CLUB VALUABLE

Prof. Loeffel suggested utilization of such youth organizations as the 4-H Club as a means of spreading the "gospel" of refrigerated locker storage. Such groups, he said, form "one of the valuable educational forces in the rural sections of the United States. He attached particular importance to the work of the demonstration teams sponsored by these organizations.

As an example of what can be done along this line, a demonstration was staged by a team from Washington county, Neb. This team, consisting of two girls trained by Mrs. Merton Kuhr of Blair, was introduced by Miss Ruth Wolfe, a home demonstration agent also of Blair.

The girls demonstrated before the conference the way in which they prepared foods for the freezer locker in their home community. Major portion of the exhibition was devoted to frozen food cookery, with the girls preparing an entire meal from produce which they had removed from their locker at the Blair plant that morning.

PRIZES AS STIMULUS

Prof. Loeffel expressed the belief that locker plant operators could profit materially by supplying all sorts of pertinent information to 4-H Club members and leaders, and perhaps by stimulating study along these lines by offering prizes for the best demonstration teams in their home communities. State locker plant associations, he advised, might well consider the offering of prizes for the teams winning state-wide competitions held at the various state fairs.

Such a plan, he declared, would result in the spreading of the desired information not only among contestants but also among their parents and friends. Even further dissemination of this material would be obtained through the various demonstrations which these teams frequently stage before all types of meetings.

Another means of attracting attention to locker plants, suggested Prof. Loeffel, would be to promote essay contests either for 4-H Club members or home project women, offering prizes for the best papers on the efficient use of refrigerated storage lockers or for the best menus and recipes using frozen foods. These recipes and menus, when properly checked and tested, might well be made the basis of advertising or publicity material, he stated.

FREEZING ALONE NOT ENOUGH

Dr. P. A. Downs, bacteriologist with the Nebraska Dairy Department, pointed out that the chief causes of spoilage in perishable foods are bacteria, molds, and enzymes. He stressed the fact that there are molds which grow at temperatures as low as 16° F., so for that reason merely freezing foods does not assure their safekeeping.

"Contamination should be reduced to the minimum by scrupulous cleanliness in the handling of all foods," Dr. Downs continued, "particularly the extremely perishable products like meat."

Dr. H. H. Plagge of the department of pomology at Iowa State College talked on "Preserving Fruits and Vegetables by Freezing." Dr. Plagge had just returned from an extensive trip to the Pacific coast where he made a study of freezing methods in vogue there.

"LET'S NOT WASTE TIME . . ."

He reviewed the kinds of vegetables which may be frozen efficiently. "Let's not waste time and space freezing vegetables like lettuce, celery, cabbage, and onions, or vegetables which can be canned as easily as tomatoes," he said. The person who likes new potatoes can freeze them, according to Dr. Plagge; in fact, this is one of the most popular frozen foods in Great Britain.

The selection af varieties is very important, he declared, as some which are excellent for canning purposes are very inferior for freezing.

He emphasized the importance of scalding fruits and vegetables to stop enzyme action. After scalding, the product must be quickly chilled in cold water, he warned, and then placed in containers and frozen as soon as possible.

"The brush fruits," he went on, "including berries of all kinds, lend themselves to freezer storage with excellent advantage. The yellow-fleshed peaches such as the Hale and the Elberta may be frozen. Summer apples in some sections of the United States may be preserved in the freezer locker."

ROUNDTABLE AND CLINIC

Second day of the conference began with a roundtable discussion on efficient plant operation. Plant operators held a clinic discussing some of the problems they had encountered and how they had overcome these difficulties.

Prof. Loeffel reminded the operators that the quality of the meat taken from the locker is no better than the quality of that which goes into it. "Beef and lamb," he said, "are improved by aging or ripening 10 to 14 days at a temperature of 34 to 36° F., but pork should be cut and wrapped as soon as possible after it has been thoroughly chilled.

"One of the important considerations in preparing meat for the freezer locker is wrapping with a suitable paper to prevent dehydration or so-called 'freezer burn.' Ordinary butcher paper permits the air to pass through and it is frequently so brittle that it is badly broken when the meat goes into the freezer locker.

"Some families like an assortment of cuts in each package, a roast, some steak, some boiling beef, and perhaps some ground beef. Cuts should be interleaved—that is, sheets of paper placed between them so that they do not freeze together.

REMOVAL OF BONES

"It is a good plan to remove as many of the bones from the cuts as possible. This saves valuable space in the locker and also reduces perforations of the wrappers by projecting bones.

"One woman," Prof. Loeffel declared, "made a thick broth from the bones and placed this broth in the freezer trays of her household refrigerator. When the broth had solidified, she wrapped the cubes in heavy waxed paper and placed them in her locker to be used for gravy and soup stock.

"It is important that all packages be properly identified and the patron should be urged to keep an inventory in order that no disputes may arise as to the disappearance of packages in the locker."

At the afternoon session Miss Matilda Peters of the university's home economics department gave a discussion on the cooking of frozen foods, particularly frozen meat.

Miss Peters cited work to show that there is no material difference in quality or palatability of meat cooked in a frozen condition as compared with meat cooked after defrosting. One must be careful, she warned, to prevent deterioration, for frozen meat is more perishable and breaks down more quickly than fresh meat.

Another roundtable followed Miss Peters' talk. At the close of this discussion a committee reported in favor of establishing a state organization, the Nebraska Refrigerated Locker Association, and proposed a constitution.

This move was approved by the operators present and the following officers were elected: Roy G. Myers, Falls City, president; Mrs. J. Franzenburg, Arlington, vice president; Jesse Mason, College of Agricultural, Lincoln, secretary; and Guy Ziegler, Ashland, treasurer.

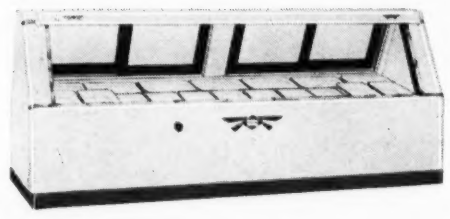
EQUIPMENT EXHIBITED

One of the features of the conference was a number of exhibits of lockers and refrigeration equipment, as well as containers of various kinds, and paper suitable for wrapping meat.

One of the guests of the conference was Mr. E. G. Squire of Shenandoah, Iowa, President of the Iowa Refrigerated Locker Association. He reviewed briefly the accomplishments of the Iowa group.

THE BUYER'S GUIDE

DOUBLE YOUR PROFITS
Selling
THE PROFIT LINE FOR '39



Refrigerator and compressor sales go together. Sell both on one contract.

THE SHERER FRANCHISE OFFERS: ★Complete line of cases, coolers and boxes. ★New equipment under development opens new fields for compressor sales.

★Layout department—Store layouts without obligation. ★Advertising—Sherer advertises by mail and in trade publications.

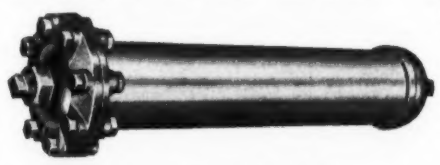
Write for catalog and franchise details, mentioning territory desired.

SHERER-GILLETT CO., MARSHALL, MICHIGAN

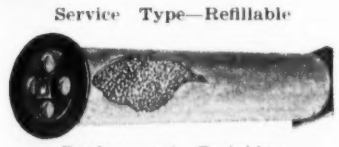
AMINCO DEHYDRATORS

It is not necessary to carry an immense stock of dehydrators to fill every demand.

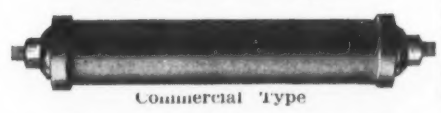
Aminco Dehydrators, made with female pipe threads, are the answer to supplying any size dehydrator. Standard fittings supplied from jobber stocks, make each Aminco Dehydrator available for any job requiring its rated capacity, regardless of connection.



Service Type—Refillable



Replacement Cartridge



Commercial Type

Aminco Dehydrators both Commercial and Service types are available for 1-15 ton capacity in Cartridge Fill, Loose Fill and Non-Refillable units.

Activated Alumina is standard fill, calcium chloride, calcium oxide or zinc moss supplied on order at same price.

Send for Dehydrator bulletin.

AMERICAN INJECTOR COMPANY
1481 FOURTEENTH AVENUE, DETROIT, MICH.
Pacific Coast: Van D. Clothier, 1015 E. 16th, Los Angeles, Calif.
Export: Borg-Warner International Corp., 320 S. Michigan Ave., Chicago, Ill.

HENRY STRAINER
WITH FELT SACK

TYPE 884

Gasketed screw joint end cap permits quick removal of felt sack for cleaning. 100 mesh screen; area, 17.3 sq. in. Shell 2 in. O. D. x 4⅞ in. long. Wt. 1¾ lbs. There is a Henry Strainer for every installation requirement.

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You Lead With LARKIN
The Original Cross-Fin Coils

More Sales—Bigger Profits—More Customers—they can all be yours when you sell the famous LARKIN "Continuous Fin" coils.

See Your Jobber Today or Write Direct to

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Branch Factory, 57 East Eleventh St., New York City

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TRAINING MEN IS OUR JOB
And U.E.I. Free Placement Bureau supplies trained shop mechanics, installation and service men to this industry. When you need a good workman, use this Free Service. No fees of any kind.
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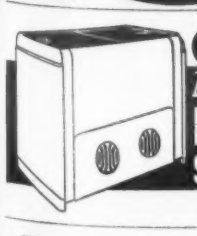

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A complete line in all sizes
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20 North Wacker Dr., Chicago

Major Appliances

Move To Bridgeport Completed By G-E; Institute, Home Bureau Relocated

(Concluded from Page 1, Column 2)

from its original headquarters at 570 Lexington Ave., New York City, and henceforth will be located as one of the units in the G-E plant here. The change was effective Oct. 16.

Relocation of the Home Bureau will make possible a closer coordination between it and the other G-E departments supplying equipment to the building industry, it is believed. C. W. Stuart is manager of the service, which was established in 1936 as a technical and sales aid to architects and home builders.

The Bureau will be enlarged by the inclusion in its architectural engineering division of the kitchen planning division, formerly located at Cleveland. A Home Bureau contact office will continue to be maintained at the G-E Building in New York City.

Under the new arrangement all activities relating to G-E household refrigerators, ranges, water heaters, dishwashers, disposalls, and electric kitchens or storage appliances, formerly carried on at Cleveland, will be located at Bridgeport. This move does not in any way affect the present manufacturing arrangements, and these products will continue to be produced in the same factories as heretofore.

General Electric's specialty appliance division, founded upon what has probably been its best-known product, the household electric refrigerator, has been located at Cleveland for many years, together with the company's incandescent lamp and lighting activities.

The move to Bridgeport brings together for the first time physically the activities devoted to the larger appliances and those centering about the design, manufacture, and sale of such products as home laundry equipment, heating devices, electric clocks, fans, vacuum cleaners, and other miscellaneous appliances. The company's construction materials sales division is also located at Bridgeport.

Dunbar To Supervise G-E Full-Line Appliance Advertising Under New Divisional Set-Up

BRIDGEPORT, Conn. — Several additional appointments to the newly organized advertising division of the General Electric appliance and merchandise department have been made by Boyd W. Bullock, advertising manager.

J. W. Dunbar, who for the past year and a half has acted as assistant to the advertising manager, in charge of media relations, becomes supervisor of full-line appliance advertising.

He will have particular responsibility for such programs as the "It's Easy To Stay Young Electrically" campaign which inaugurates in national magazines this fall the new G-E drive on all appliances. Mr. Dunbar was associated for many years with the advertising of G-E incandescent lamps at Nela Park, Cleveland.

Carle B. Robbins has been appointed copy chief of the new division, and will continue as editor of News-Graphic, the G-E appliance magazine which is issued monthly to distributors and dealers. Mr. Robbins formerly made his headquarters at Nela Park.

K. G. Patrick has been placed in charge of press relations for the entire appliance line, and will continue to make his headquarters at the General Electric building in New York City. He will also continue to represent the company's air-conditioning and commercial refrigeration department in the same capacity.

Donald A. Wood has been appointed production manager of the new advertising division. Since last spring he has been supervising head of advertising service at Bridgeport. In his new post he will be responsible for matters pertaining to media relations, art, photographs, cost records and distribution, displays and exhibits, printing, and production for all G-E appliance lines, including radio, plastics, and construction materials.

K. R. Davis, with 17 years of advertising experience, has been named to supervise media relations as part of the new organization. J. E. Neuberger, under Mr. Davis, will be in charge of space production.

Mr. Davis joined General Electric in 1930 as production manager for the specialty appliance sales division at Nela Park. He assisted in the direction of various phases of advertising and sales promotion under A. L. Scaife, and for the past five years has been handling the space problems for specialty appliance lines.

Art section of the new organization will be under the direction of Edwin C. Sauter, with J. D. Taplin as assistant art director. Mr. Sauter was formerly in the G-E art department in Schenectady, N. Y., and Mr. Taplin held a similar position at Nela Park.

Displays and exhibits for the appliance and merchandise department will be directed by A. C. Kidder and C. O. Hamlin, with G. R. LaWall and L. A. Whitney as designers.

Fall Buying Campaign Launched In Knoxville; $500,000 In 'Wait 'Til Spring' Sales Sought

KNOXVILLE, Tenn.—A 13 weeks' campaign to stimulate fall buying of major appliances has been launched by department, furniture, and specialty stores in this area, with its goal $500,000 in sales, many of which would ordinarily be delayed until next spring.

Centering the drive is the new permanent "Leisure House" model kitchen in the City Electrical Department Building, which is being used as a focal point for meetings of women's clubs, cooking schools, and demonstrations.

Stores take turns in sponsoring cooking schools twice a week, while daily meetings and demonstrations have been scheduled in the new assembly hall.

Chief target in the campaign is the replacement buyer, studies indicating that one fourth of all sales this fall will be made to present owners of appliances, C. O. Carpenter, Jr., sales manager of the City Utilities Board, reports.

Each housewife attending a cooking school is asked to fill out an attendance card, which is turned over to the dealer sponsoring that day's affair. Listed on the card are the number of persons in the family, electrical appliances now owned, approximate age of this equipment, and the appliance the woman wants to buy next.

Tops 'Replacement' Drive

FLORENCE, S. C.—Walker Electric Co., combining the abilities of Roy, "Milt," and Mrs. Walker, walked off with the $10 prize offered to the top dealer in a special seven-week campaign between the towns of Florence and Sumter for replacing the most gas equipment with electric equipment during this period.

To win the prize, the Walker firm replaced nine gas refrigerators, ranges, and water heaters with corresponding electrical units.

Macy 'Cash-Time' Plan Off To Good Start

NEW YORK CITY — Heavy response to its recently adopted policy of "cash-time" selling, with more than 100 accounts opened during the first hour that the new system was in effect, has been reported by R. H. Macy Co., Inc., a retail merchandising organization long known for its "strictly cash" sales policy.

"Purchase book certificates," sold in units of $25 with a $1.60 service charge and five months in which to pay, form the basis of the new system. Certificates in these books are used in payment for merchandise bought in the store.

Persons having credit records in the files of the Credit Bureau of New York received their purchase books without delay. Others were required to wait until the customary credit investigations had been made.

Sales involving the purchase certificates were so well distributed among the store's departments, officials reported, that it was difficult to say which sections enjoyed the largest certificate trade.

Buyers of purchase book certificates were advised not to spend them for goods which have been price-fixed under the state's Fair Trade Law, as there will be no adjustment of the service charge, even though such a charge cannot be made on the price-fixed items.

Store officials estimated that 170 cash-time accounts were opened by employes and customers before the system was officially put into operation.

'Riding the Range' With Hotpoint

During the September-October Hotpoint range and water heater campaign, when distributors and dealers were urged to "Cash In on the Exposition," the Graybar organization of Kansas City, Mo. and officials of the Hotpoint Kansas City sales district toured Kansas holding "Last Round-Up" meetings among dealers and utility organizations.

One of the largest was held in Wichita, with 125 in attendance, where this picture was taken. Left to right: D. W. Martin, Kansas City, Hotpoint district representative; E. F. Linnerson, Graybar Wichita manager; A. W. Peterson, Kansas City, Hotpoint district manager; J. W. Frazer, Kansas City, Graybar district merchandising manager; and C. J. Prashaw, Kansas City, Hotpoint district representative.

Dealer To Open New Store

NEWARK, N. J. — Sachs Furniture & Radio Co. will open a store at 75 Market St. here on Oct. 25. The firm, which operates branches in Paterson and Passaic, will feature electrical appliances in the new store, which will occupy 15,000 sq. ft.

3 Dealers Stage 3-Day School

SPRUCE PINE, N. C.—Johnson Electric Co., Spruce Pine Store Co., and Burleson Store Co., electrical appliance dealers here, recently cooperated in staging a three-day cooking school featuring Mrs. Allison, home economist.

Change to (A-P) VALVES

THEY'LL LICK YOUR VALVE SERVICE Troubles

Wood Refrigerating Company
Automatic Refrigerating Systems
1539 Penn Avenue
(Corner 16th Street)
Pittsburgh, Pa.

ATlantic 7668
Nights and Holidays
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September 19, 1939

COMPLETE SERVICE
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ERECTING
OVERHAULING
ICE MACHINERY
REFRIGERATING MACHINERY
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BRINE COOLERS
ICE CANS
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AGITATORS
CRANES
ICE TANKS
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SPRAYS
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ICE MACHINE OIL
METHYL CHLORIDE
AMMONIA

Automatic Products Company
2450 North 32nd Street
Milwaukee, Wisconsin

Gentlemen:

After experiencing considerable valve trouble several years back, we were persuaded to try the Automatic Products valve.

Since then we have had occasion to install several hundreds of these valves and have had very excellent results using your valves in combination with WORTHINGTON-CARBONDALE equipment on GLOEKLER MANUFACTURING COMPANY'S refrigerators and display cases.

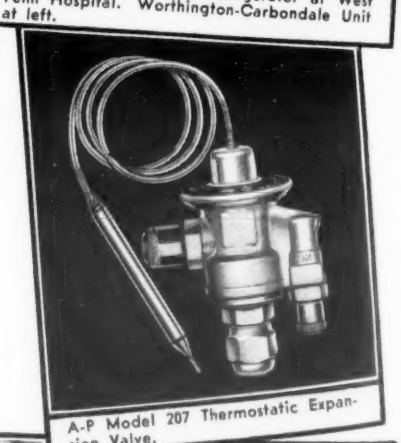
Very truly yours,

WOOD REFRIGERATING COMPANY

E. T. DALE

ETD/ms

Modern Stainless Steel Refrigerator at West Penn Hospital. Worthington-Carbondale Unit at left.



A-P Model 207 Thermostatic Expansion Valve.

Interior of Gloekler Stainless Steel Refrigerator, showing Meat storage racks, shelves and refrigerator coils.

- Installation: West Penn Hospital, Pittsburgh, Pa.
- Equipment: Refrigerator—Gloekler Manufacturing Co. Compressors—Worthington-Carbondale.
- Installed by: Wood Refrigerating Company, Pittsburgh, Pa.
- Valves—A-P.

Hundreds of Refrigeration Engineers are proving that one method to lick Expansion Valve Trouble is a *"Switch to (A-P) Valves."*

If you want to be CERTAIN of accurate Refrigerant Control on all YOUR installations, follow the example of others. You'll enjoy the feeling of confidence (A-P) Expansion Valves give you on every job. . . . And you'll profit by the satisfaction your customers express in efficient *trouble-free* installations.

(A-P) Expansion Valves are RECOMMENDED by Jobbers, Refrigeration Engineers and Service Men, as well as users of every type of Refrigeration and Air Conditioning. *There are reasons for this praise!*

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